

Webster County Schools

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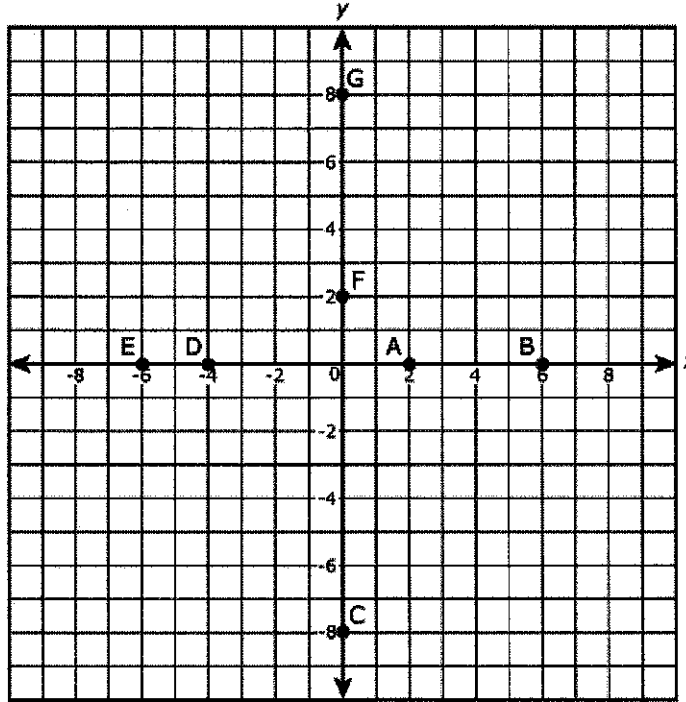
9th – 12th Grade

Packet 7

1. Factor the expression $3x(x + 2) + 2(x + 2) - 3(x + 2)$.

$$(\underline{1}x + \underline{2})(\underline{3}x + \underline{-1})$$

2. Which of the plotted points on the graph represent zeros of the function $f(x) = x^2 + 2x - 8$? Select all that apply.



- A. (2, 0)
- B. (0, -8)
- C. (6, 0)
- D. (-4, 0)
- E. (0, 8)

3. Rewrite the expression $(3x^2 + 2y^2 - 3x) + (2x^2 + y^2 - 2x) - (x^2 + 4y^2 + x)$ to find the coefficients of each term. Write the coefficients in the appropriate boxes. 32

$$\boxed{4} x^2 + \boxed{-1} y^2 + \boxed{-6} x$$

4. Which expression is equivalent to $(3x^5 + 8x^3) - (7x^2 - 6x^3)$?
- A. $-4x^3 + 14$
 - B. $-4x^5 + 14x^3$
 - C. $3x^5 + 14x^3 - 7x^2$
 - D. $3x^5 + 2x^3 - 7x^2$
5. The function $f(x) = -0.25x + 5$ models the height of a candle x seconds after it is lit. What is the meaning of the y -intercept of the function?
- A. the initial height of the candle
 - B. the final height of the candle
 - C. the rate at which the candle is burning
 - D. the amount of time it will take the candle to burn
6. The expression $4(5 - 3y) + 3(y + 2)$ is simplified in the following steps.

Step 1: $4(5 - 3y) + 3(y + 2) = 20 - 12y + 3y + 6$

Step 2: $= 20 + -9y + 6$

Step 3: $= 20 + 6 + -9y$

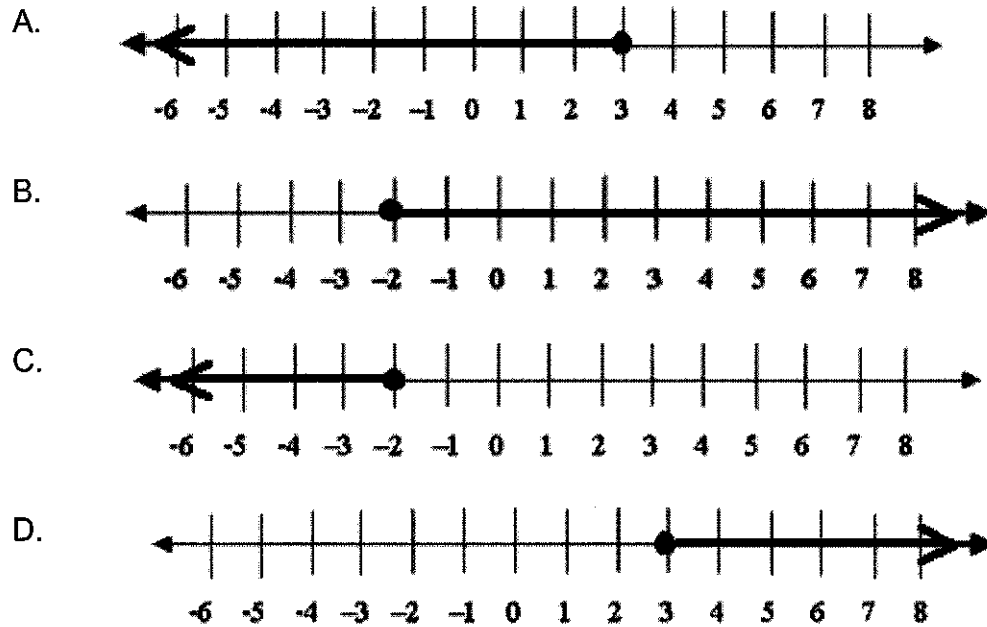
Step 4: $= 26 + -9y$

Which property was used to go from Step 2 to Step 3?

- A. commutative property
- B. associative property
- C. distributive property
- D. additive identity

7. Which graph represents all of the solutions to the inequality shown below?

$$-3x + 2 \leq 8$$



8. What is the solution of the following system of equations?

$$2x + 3y = 12$$

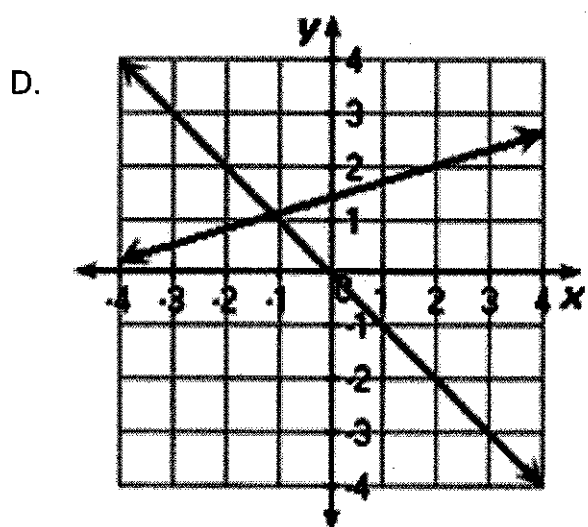
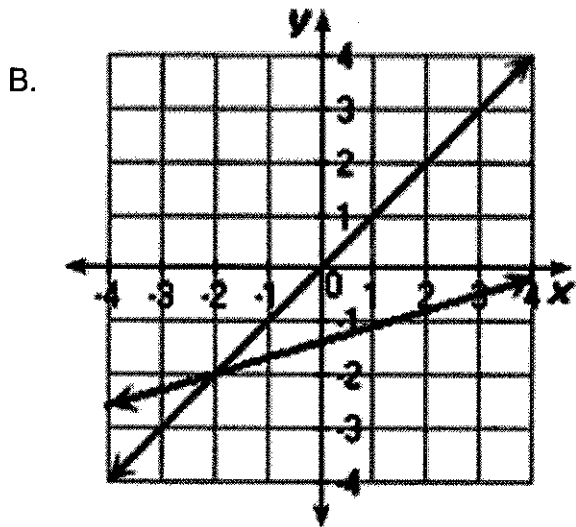
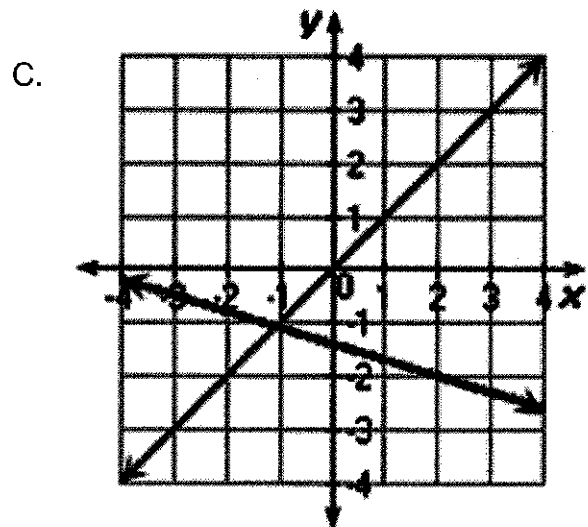
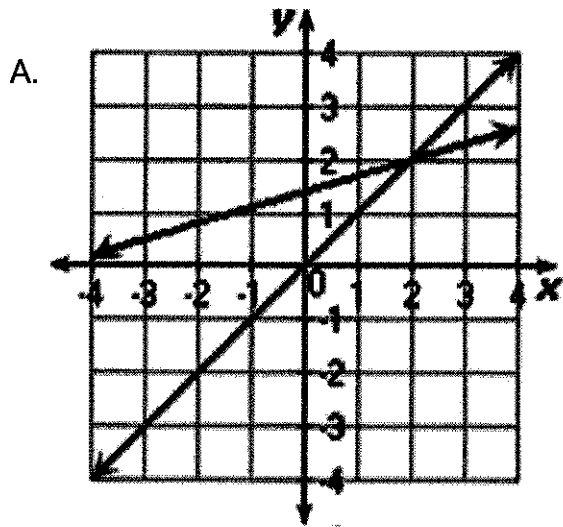
$$x = \frac{1}{2}y - 6$$

- A. $x = -6$ and $y = 0$
- B. $x = -4.5$ and $y = 3$
- C. $x = -3$ and $y = 6$
- D. $x = 24$ and $y = 6$

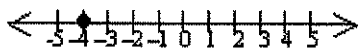
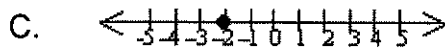
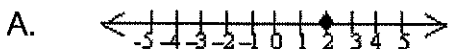
9. Which of the following graphs show the solution of the system of equations?

$$y = x$$

$$x + 3y = -4$$



10. Which graph shows the solution of $3x - 5 = -17$?



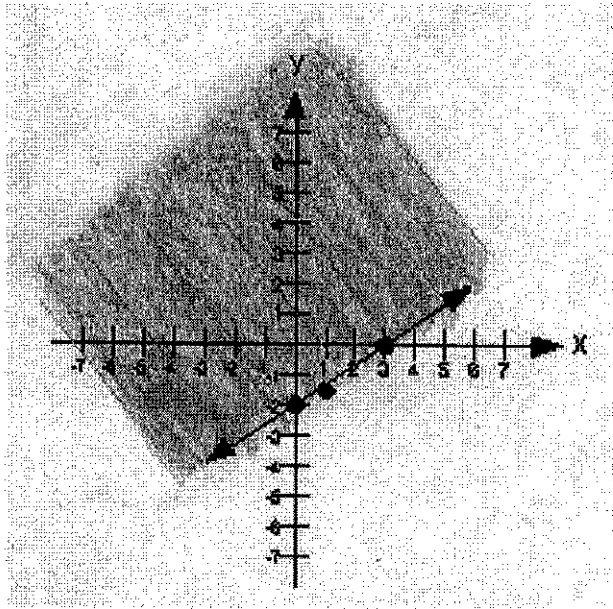
B.

D.

11. John factored out the greatest common factor (GCF) of the polynomial $-6x^3 - 4x^2 - 2x$. What is the GCF of this polynomial?

$-2X$

12. Which linear inequality is graphed below?



- A. $2x - 3y \leq 6$
- B. $3x - 2y \leq 6$
- C. $3x - 2y \geq 6$
- D. $2x - 3y \geq 6$

13. Determine whether the linear equations yield one solution, infinitely many solutions, or no solution and write in the box. 11

a. $5x + 5 = 3(5x - 4) - 10x$

NO SOLUTION

b. $3(2x - 1) - 7 = 6x - 10$

INFINITELY MANY

c. $2x + 2 + 3x = 3(x - 2)$

ONE SOLUTION

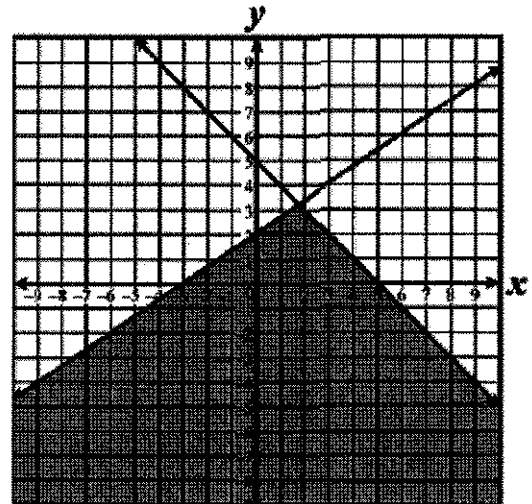
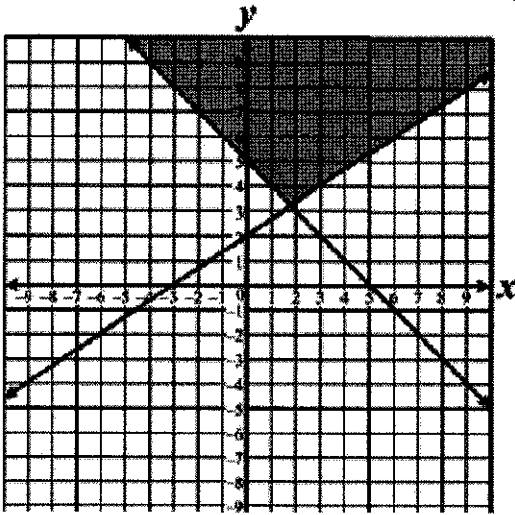
ONE SOLUTION

d. $6(x + 5) = 10 - (x - 20)$

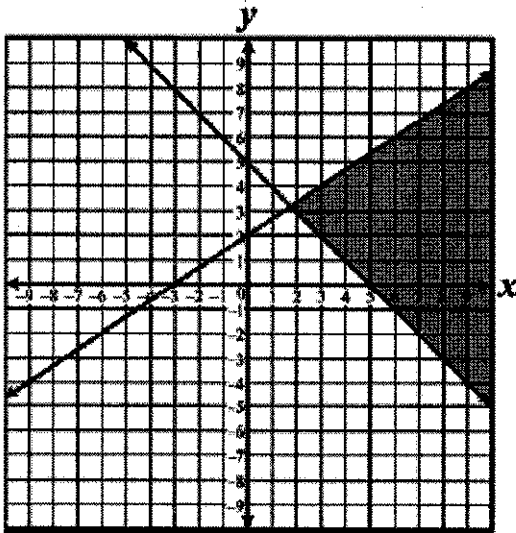
14. Which graph best represents the solution to the system of linear inequalities below?

$$\begin{aligned} x + y &\leq 5 \\ -2x + 3y &\geq 6 \end{aligned}$$

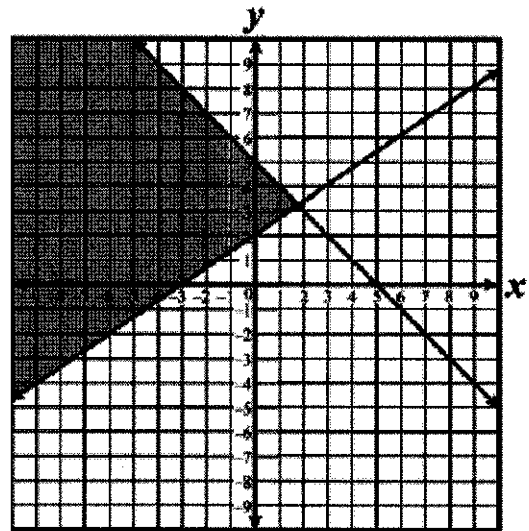
A.



B.



D.

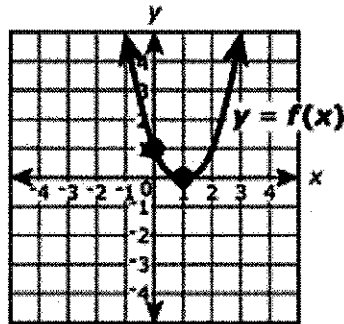


15. The graph of $y = 4x - 11$ is translated up 8 units. Which equation represents the translated graph?

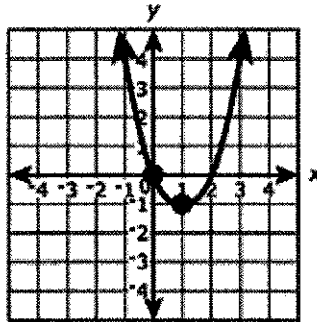
A. $y = 4x - 19$

- B. $y = 12x - 3$
- C. $y = 12x - 11$
- D. $y = 4x - 3$

16. Consider the function, $f(x)$, shown on the coordinate plane.



Below, $y = f(x + p) + n$ is a transformation of $f(x)$. Fill in the missing values for p and n that describe the transformation of $f(x)$ to y .

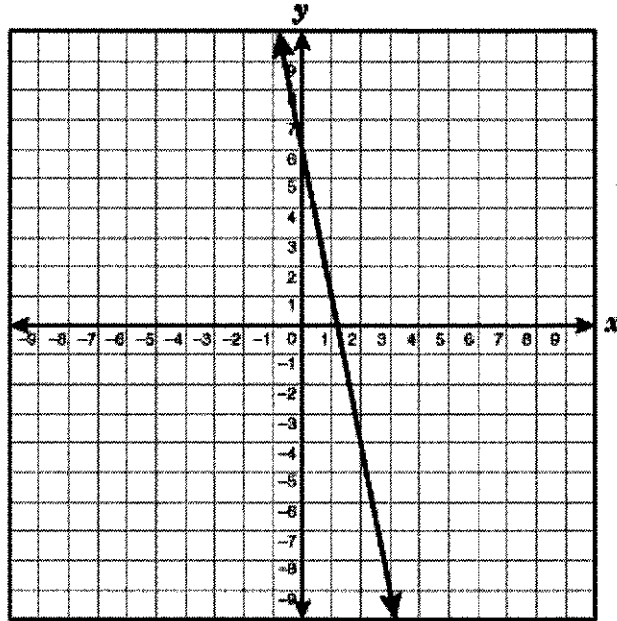


$$y = f(x + \boxed{0}) + \boxed{-1}$$

17. Select the correct factorization of the quadratic function $6x^2 - 5x - 6$.

- A. $(6x + 1)(x - 6)$
- B. $(3x - 2)(2x + 3)$
- C. $(3x + 2)(2x - 3)$
- D. $(6x - 3)(x + 2)$

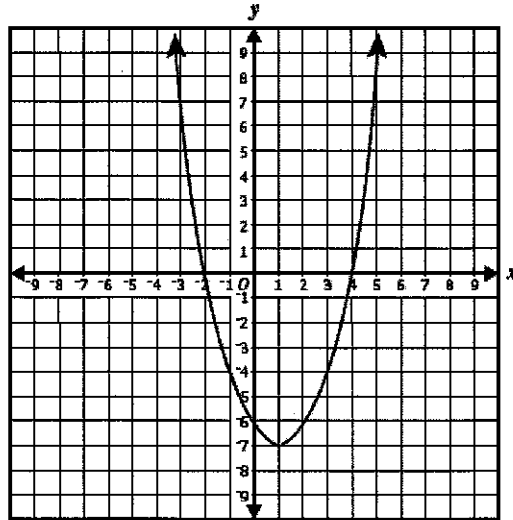
18. The graph of a linear function is shown on the coordinate grid below.



If the y -intercept is changed to $(0, 5)$ and the slope becomes -5 , which statement best describes the relationship between the two lines when they are graphed on the same coordinate grid?

- A. The y -intercepts are 1 unit apart, and the lines are parallel.
- B. The y -intercepts are 1 unit apart, and the lines intersect at $(1, 1)$.
- C. The y -intercepts are 1 unit apart, and the lines are perpendicular.
- D. The y -intercepts are 1 unit apart, and the lines intersect at $(1, 0)$.

19. The function $f(x)$ is graphed on the coordinate plane.



What are the zeros of $f(x + 3)$? Choose two of the answer choices.

- A. 4
- B. -6
- C. -5
- D. 1
- E. -2

20. Emily solved the equation $2(x + 9) = 4(x + 7) + 2$. Her steps are shown.

Which step identifies an error?

Step 1: $2(x + 9) = 4(x + 7) + 2$

Step 2: $2x + 18 = 4x + 28 + 2$

Step 3: $2x + 18 = 4x + 26$

B.R.E.A.K. Bailey's Right **Step 4:** $-8 = 2x$

Knowledge

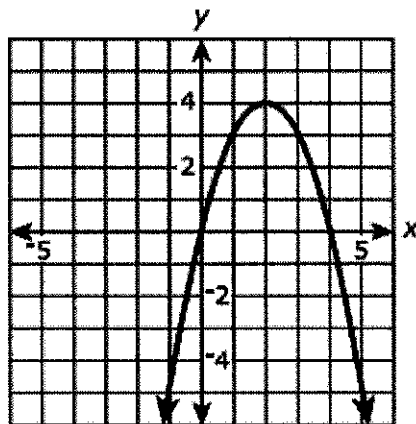
Step 5: $-4 = x$

- A. Step 2
- B. Step 3
- C. Step 4
- D. Step 5

21. Emily solved the equation $2(x + 9) = 4(x + 7) + 2$. What is her solution?

- A. $x = 4.5$
- B. $x = -6$
- C. $x = -2$
- D. $x = 2$

22. The function $f(x) = 4x - x^2$ is graphed in the xy -coordinate plane as shown.

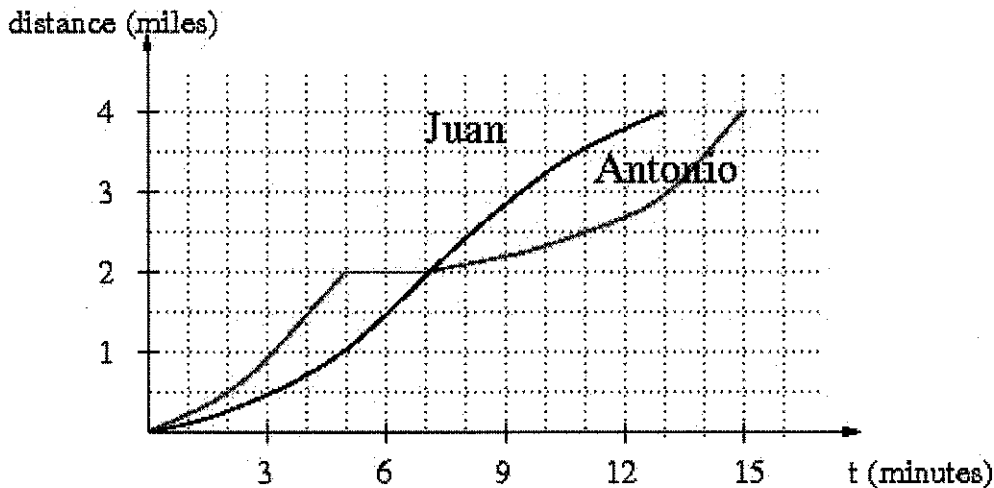


Based on the graph of the function, which statements are true? Select all that apply.

- A. f is increasing on the interval $x < 0$
- B. f is decreasing on the interval $x < 0$
- C. f is increasing on the interval $0 < x < 2$
- D. f is decreasing on the interval $0 < x < 2$

- E. f is increasing on the interval $2 < x < 4$
- F. f is decreasing on the interval $2 < x < 4$
- G. f is increasing on the interval $x > 4$
- H. f is decreasing on the interval $x > 4$

23. Antonio and Juan are in a 4-mile bike race. The graph below shows the distance of each racer (in miles) as a function of time (in minutes).



At what time are the racers at the same point in the race and who won the race?

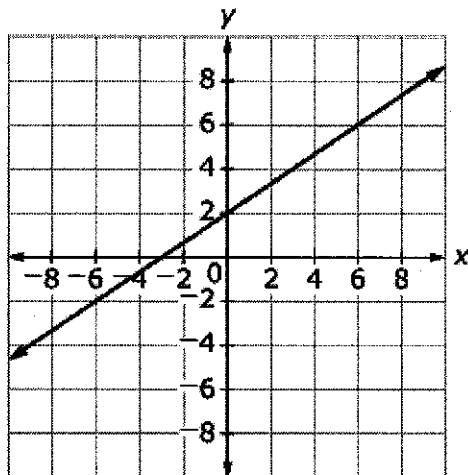
7 minutes Juan won the race

24. The equation $y = 1.15x + 8.53$ models the approximate height of a plant in centimeters after x weeks. Which statements are true about the linear model. Select all that apply.

- A. The plant grows about 8.53 centimeters each week.
- B. The plant grows about 1.15 centimeters each week.
- C. The initial height of the plant is 1.15 centimeters.

- D. The initial height of the plant is 8.53 centimeters.
- E. The plant grows a total of 1.15 centimeters.

25. The function $f(x)$ is represented in the graph below.



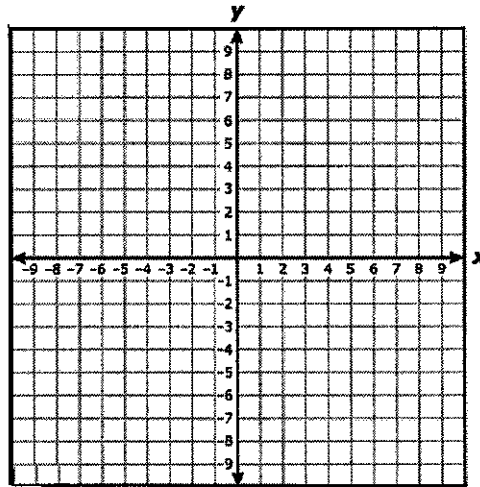
If $g(x) = x + 2$, which of the following comparisons is true? 20

- A. The rate of change of $f(x)$ is greater than the rate of change of $g(x)$.
The y intercept of $f(x)$ is the same as the y intercept of $g(x)$.
- B. The rate of change of $f(x)$ is less than the rate of change of $g(x)$.
The y intercept of $f(x)$ is the same as the y intercept of $g(x)$.
- C. The rate of change of $f(x)$ is greater than the rate of change of $g(x)$.
The y intercept of $f(x)$ is the less than the y intercept of $g(x)$.
- D. The rate of change of $f(x)$ is less than the rate of change of $g(x)$.
The y intercept of $f(x)$ is the less than the y intercept of $g(x)$.

1. Factor the expression $2x(x + 2) + 3(x + 2) - (x + 2)$.

$$(\quad x + \quad)(\quad x + \quad)$$

2. Identify the zeros of the function $f(x) = 3x^2 + 14x - 5$ and sketch a graph of the function.



3. Rewrite the expression $(3x^2 - 4y^2 - 3x) + (x^2 + 16y^2 - 3x) - (6x^2 + 4y^2 + x)$ to find the coefficients of each term. Write the coefficients in the appropriate boxes.

$$\boxed{} x^2 + \boxed{} y^2 + \boxed{} x$$

4. Find an expression equivalent to $(2x^3 + 8x^2) - (7x^3 - 6x)$?

- A. $-9x^2 + 8x^2 + 6x$
 B. $-5x^3 + 14x^3$
 C. $-5x^3 + 8x^2 + 6x$
 D. $5x^6 + 14x$

5. The function $f(x) = -1.25x + 2$ models the height of a candle x seconds after it is lit. What is the meaning of the y -intercept of the function?

- A. the initial height of the candle
- B. the final height of the candle
- C. the rate at which the candle is burning
- D. the amount of time it will take the candle to burn

6. The expression $2(5 - 6y) + 3(y - 2)$ is simplified in the following steps.

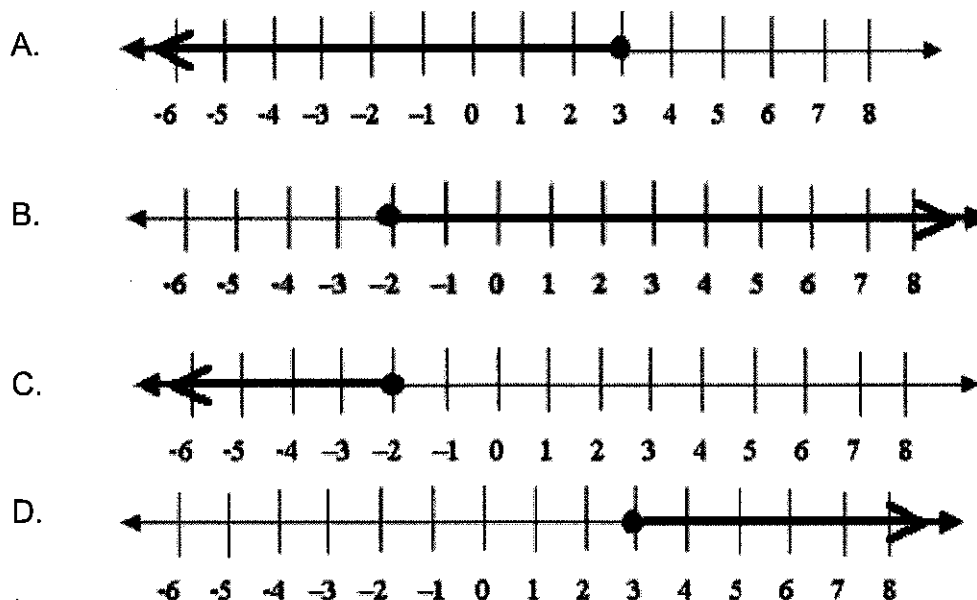
$$\begin{aligned} \text{Step 1: } & 2(5 - 6y) + 3(y - 2) = 10 - 12y + 3y - 6 \\ \text{Step 2: } & = 10 - 9y - 6 \\ \text{Step 3: } & = 10 - 6 + -9y \\ \text{Step 4: } & = 4 - 9y \end{aligned}$$

Which property is illustrated from Step 2 to Step 3?

- A. commutative property
- B. associative property
- C. distributive property
- D. additive identity

7. Which graph represents all of the solutions to the inequality shown below?

$$4x - 7 \leq 5$$



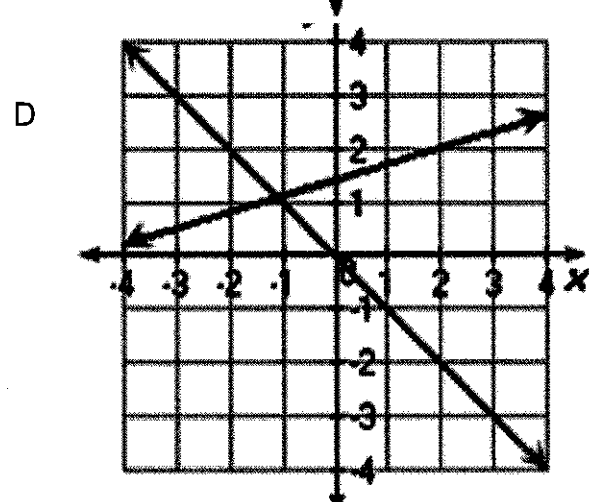
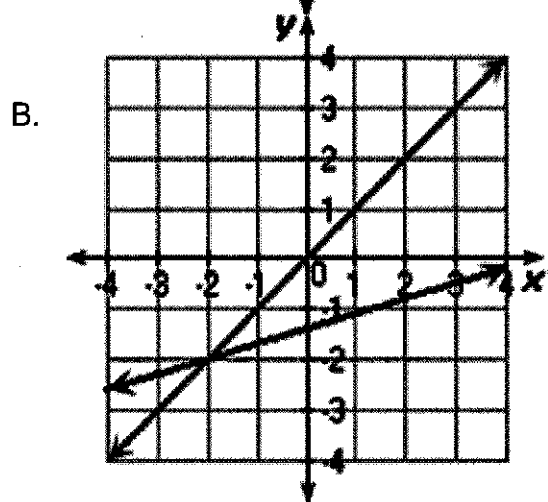
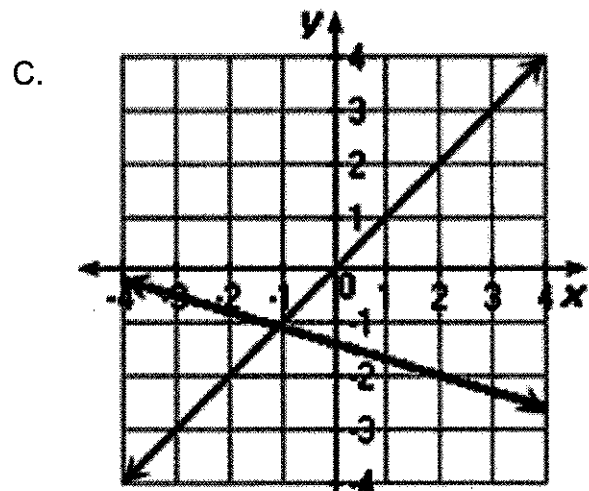
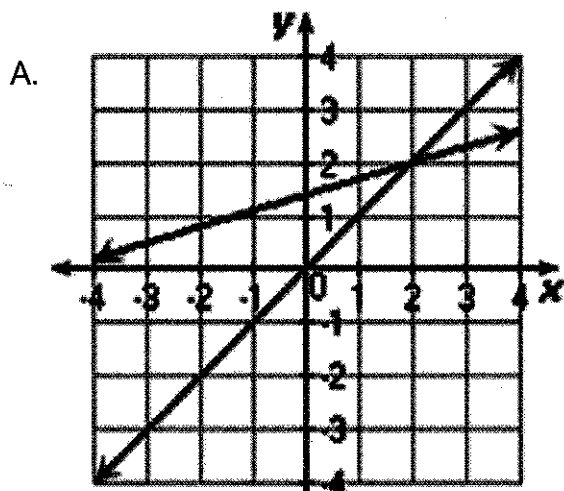
8. What is the solution of the following system of equations?

$$\begin{aligned}x + y &= 6 \\ -3x + y &= 2\end{aligned}$$

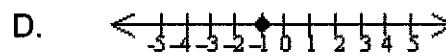
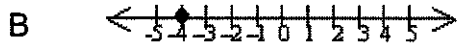
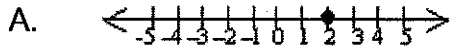
- A. $x = -6$ and $y = 5$
- B. $x = 1$ and $y = -5$
- C. $x = -3$ and $y = 6$
- D. $x = 1$ and $y = 5$

9. Which of the following graphs show the solution of the system of equations?

$$\begin{aligned}y &= x \\ 2x - 6y &= 8\end{aligned}$$

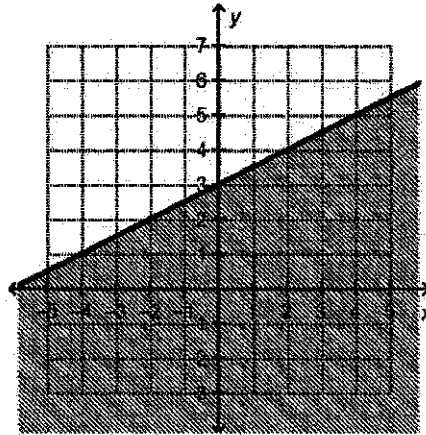


10. Identify the solution of $3x + 5 = -7$?



11. Alexis factored out the greatest common factor (GCF) of the polynomial $21x^3 - 14x^2 - 7$. What is the GCF of this polynomial?

12. Which linear inequality is graphed below?



- A. $y \leq \frac{1}{2}x + 3$
- B. $y \leq x + 3$
- C. $y \geq x + 3$
- D. $y \geq \frac{1}{2}x + 3$

13. Determine whether the linear equations yield one solution, infinitely many solutions, or no solution and write in the box.

a. $5x + 5 = 3(5x - 4) - 10x$

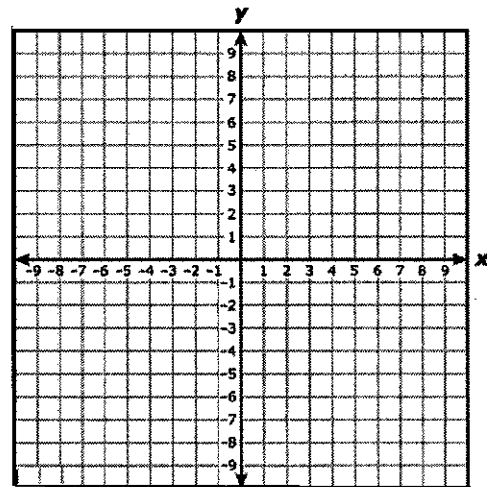
b. $7(2x - 1) - 7 = 14x - 8$

c. $4x + 4 + 6x = 2(5x + 2)$

d. $3(x + 5) = 5 - (x - 10)$

14. Explain, in words, what the graph of the system of linear inequalities would look like? Identify at least *three* ordered pairs that would be solutions to the system.

$$\begin{aligned} x + y &\leq 5 \\ -2x + 3y &\geq 6 \end{aligned}$$



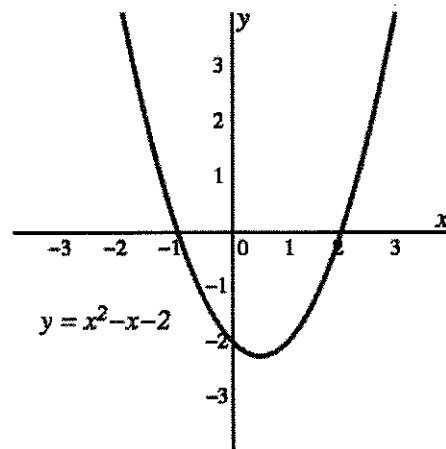
15. The graph of $y = 2x + 5$ is translated up 8 units. Which equation represents the translated graph?

- A. $y = 2x + 3$
- B. $y = 2x + 13$
- C. $y = 2x - 13$
- D. $y = 2x - 3$

16. Factor completely: $2x^2y + xy - 6y$.

- A. $(2x - 1y)(x + 6)$
- B. $y(2x - 3)(x + 2)$
- C. $(x + 2y)(2x - 3)$
- D. $y(2x - 3)(x - 2)$

17. The function $f(x)$ is graphed on the coordinate plane.



What are the zeros?

- A. 3
- B. -1
- C. -2
- D. 2
- E. 0

18. Maddox is attempting to solve the equation: $4(x + 9) = 2(x + 7) + 2$. His steps are shown below. Which initial step identifies an error?

Step 1: $4(x + 9) = 2(x + 7) + 2$

Step 2: $4x + 36 = 2x + 14 + 2$

Step 3: $2x + 36 = 16$

Step 4: $2x = 20$

Step 5: $x = 10$

- A. Step 2
- B. Step 3
- C. Step 4
- D. Step 5

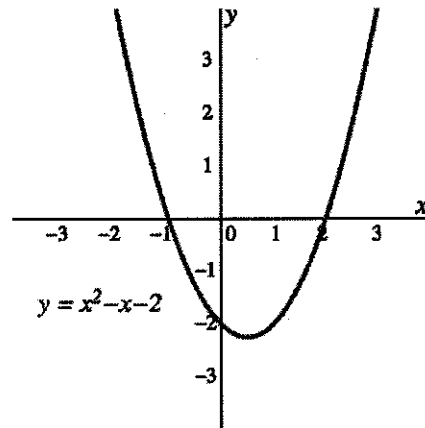
19. Philip solved the equation $-(x - 6) = 4(x + 9)$. What is the solution?

- A. $x = 10$
- B. $x = -6$
- C. No solution
- D. $x = 0$

20. The equation $y = 2.5x + 0.42$ models the approximate height of a plant in centimeters after x weeks. Which **two** statements are true about the linear model?

- A. The plant grows about 0.42 centimeters each week.
- B. The plant grows about 2.5 centimeters each week.
- C. The initial height of the plant is 2.5 centimeters.
- D. The initial height of the plant is 0.42 centimeters.
- E. The plant grows a total of 2.5 centimeters.

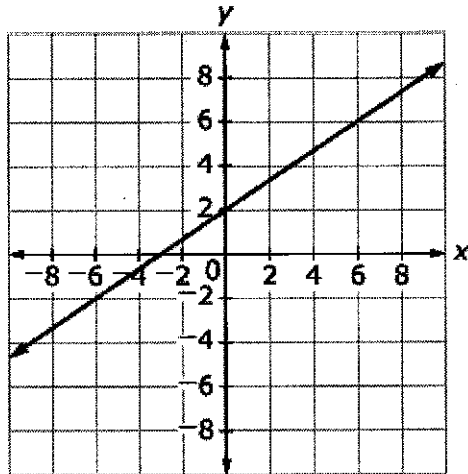
21. Based on the graph of the function, f , which **three** statements are true?



- A. f is increasing on the interval $x < \frac{1}{2}$
- B. f is decreasing on the interval $x < \frac{1}{2}$
- C. f is increasing on the interval $\frac{1}{2} < x < 2$
- D. f is decreasing on the interval $\frac{1}{2} < x < 2$
- E. f is increasing on the interval $x > 2$
- F. f is decreasing on the interval $x > 2$
22. An online company lets you download songs for \$0.99 each after you have paid a \$5 membership fee. Which domain would be most appropriate to calculate the cost to download songs?
- A. rational numbers greater than zero
- B. whole numbers greater than or equal to one
- C. integers less than or equal to zero

D. whole numbers less than or equal to one

23. The function $f(x)$ is represented in the graph below.



If $g(x) = 3x - 1$, which of the following comparisons is true?

- A. The rate of change of $f(x)$ is greater than the rate of change of $g(x)$.
The y intercept of $f(x)$ is greater than the y intercept of $g(x)$.
- B. The rate of change of $f(x)$ is less than the rate of change of $g(x)$.
The y intercept of $f(x)$ is greater than the y intercept of $g(x)$.
- C. The rate of change of $f(x)$ is greater than the rate of change of $g(x)$.
The y intercept of $f(x)$ is the less than the y intercept of $g(x)$.
- D. The rate of change of $f(x)$ is less than the rate of change of $g(x)$.
The y intercept of $f(x)$ is the less than the y intercept of $g(x)$.

24. At an ice cream shop, the profit, $P(c)$, is modeled by the function $P(c) = 0.87c$, where c represents the number of ice cream cones sold. Which is an appropriate domain for this function?

- A. an integer ≤ 0
- B. an integer ≥ 0

- C. a rational number ≤ 0
- D. a rational number ≥ 0

25. A ball was thrown upward into the air. The height, in feet, of the ball above the ground t seconds after being thrown can be determined by the expression $-16t^2 + 40t + 3$. What is the meaning of the 3 in the expression?

- A. The ball took 3 seconds to reach its maximum height.
- B. The ball took 3 seconds to reach the ground.
- C. The ball was thrown from a height of 3 feet.
- D. The ball reached a maximum height of 3 feet.

1. Factor the expression $2x(x + 2) + 3(x + 2) - (x + 2)$. 33.

$(2x + 2)(x + 2)$

2. Identify the zeros of the function $f(x) = 3x^2 + 14x - 5$ and sketch a graph of the function. 35.

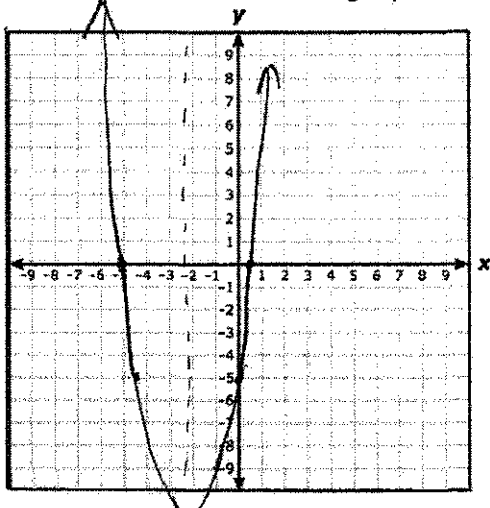
$(3x - 1)(x + 5) = 0$

$(\frac{1}{3}, 0) (-5, 0)$

$x = \frac{-14}{2(3)} = \frac{-7}{3}$

Vertex $(-\frac{7}{3}, \frac{-64}{3})$

off the grid



3. Rewrite the expression $(3x^2 - 4y^2 - 3x) + (x^2 + 16y^2 - 3x) - (6x^2 + 4y^2 + x)$ to find the coefficients of each term. Write the coefficients in the appropriate boxes. 32

$\boxed{-2}x^2 + \boxed{8}y^2 + \boxed{-7}x$

4. Find an expression equivalent to $(2x^3 + 8x^2) - (7x^3 - 6x)$? 32

A. $-9x^2 + 8x^2 + 6x$

B. $-5x^3 + 14x^3$

C. $-5x^3 + 8x^2 + 6x$

D. $5x^6 + 14x$

5. The function $f(x) = -1.25x + 2$ models the height of a candle x seconds after it is lit. What is the meaning of the y -intercept of the function? 1 NC

- A. the initial height of the candle
- B. the final height of the candle
- C. the rate at which the candle is burning
- D. the amount of time it will take the candle to burn

6. The expression $2(5 - 6y) + 3(y - 2)$ is simplified in the following steps.

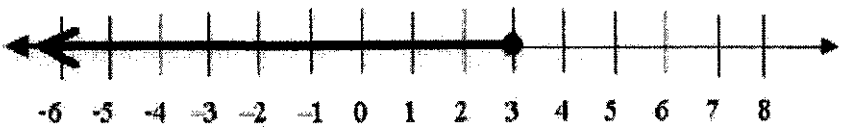
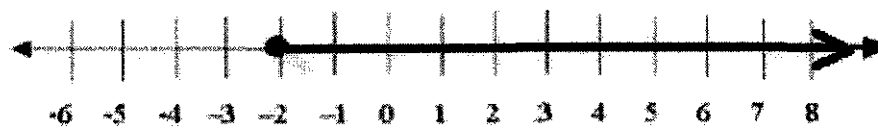
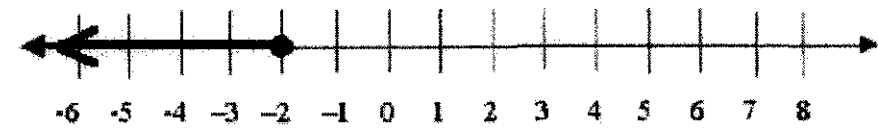
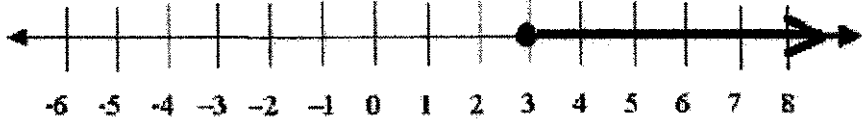
Step 1: $2(5 - 6y) + 3(y - 2) = 10 - 12y + 3y - 6$
 Step 2: $= 10 - 9y - 6$
 Step 3: $= 10 - 6 + - 9y$
 Step 4: $= 4 - 9y$

Which property is illustrated from Step 2 to Step 3? 7

- A. commutative property
- B. associative property
- C. distributive property
- D. additive identity

7. Which graph represents all of the solutions to the inequality shown below? 10

$$4x - 7 \leq 5$$

- A. 
- B. 
- C. 
- D. 

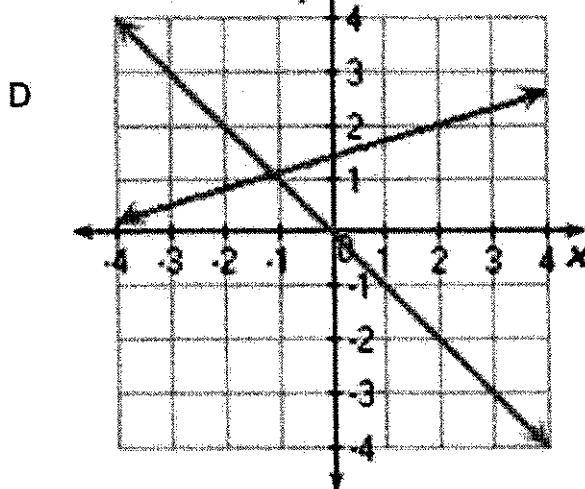
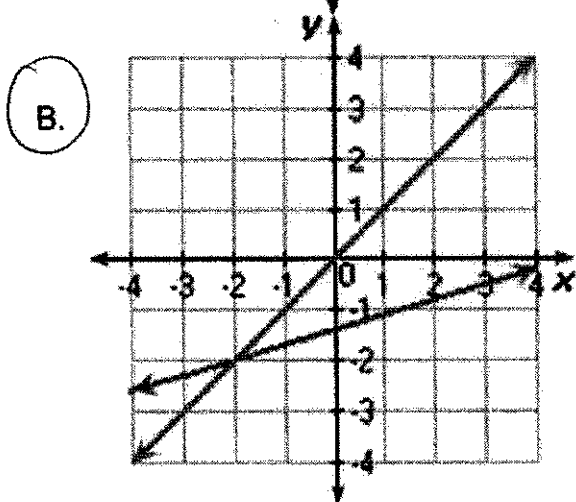
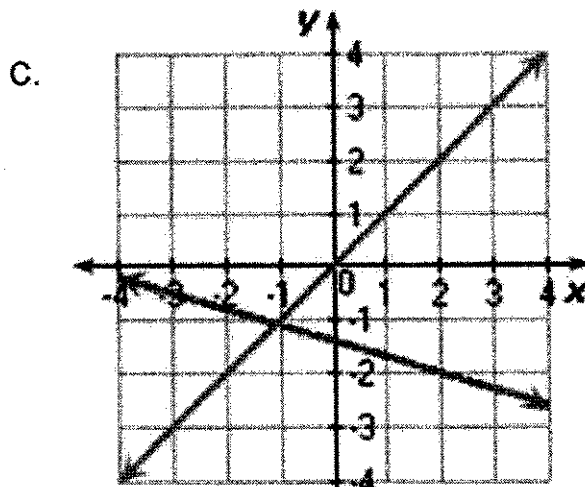
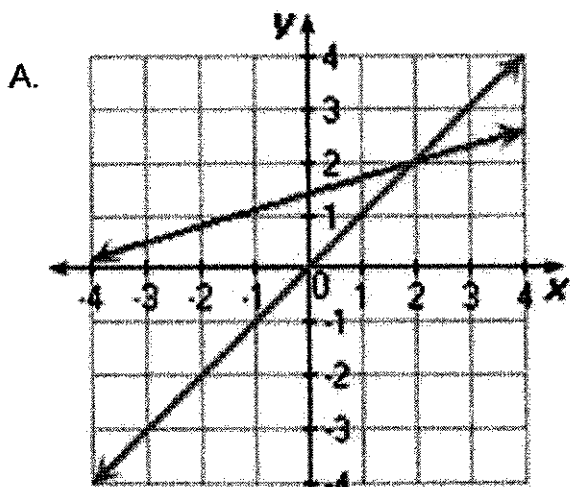
8. What is the solution of the following system of equations? 22 NY

$$\begin{aligned} x + y &= 6 \\ -3x + y &= 2 \end{aligned}$$

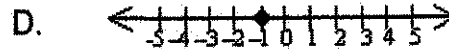
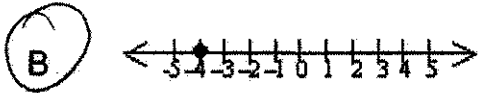
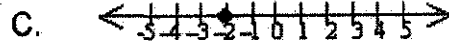
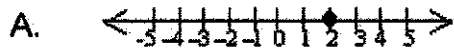
- A. $x = -6$ and $y = 5$
- B. $x = 1$ and $y = -5$
- C. $x = -3$ and $y = 6$
- D. $x = 1$ and $y = 5$**

9. Which of the following graphs show the solution of the system of equations? 22

$$\begin{aligned} y &= x \\ 2x - 6y &= 8 \end{aligned}$$



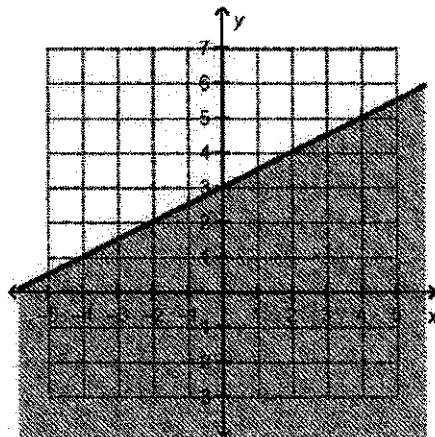
10. Identify the solution of $3x + 5 = -7$? 10



11. Alexis factored out the greatest common factor (GCF) of the polynomial $21x^3 - 14x^2 - 7$. What is the GCF of this polynomial?

33

12. Which linear inequality is graphed below? 23



- A.** $y \leq \frac{1}{2}x + 3$
- B. $y \leq x + 3$
- C. $y \geq x + 3$
- D. $y \geq \frac{1}{2}x + 3$

13. Determine whether the linear equations yield one solution, infinitely many solutions, or no solution and write in the box. 11

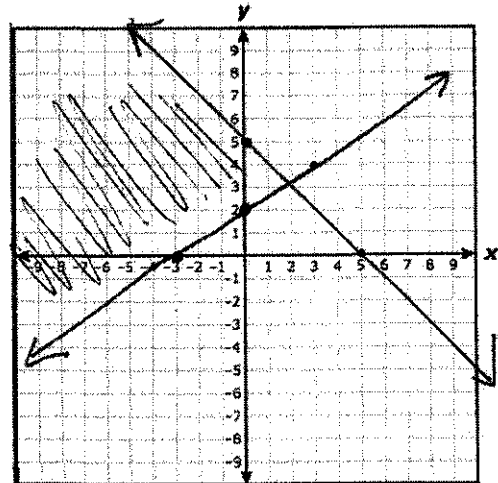
- a. $5x + 5 = 3(5x - 4) - 10x$ no solution
- b. $7(2x - 1) - 7 = 14x - 8$ no solution
- c. $4x + 4 + 6x = 2(5x + 2)$ infinitely many
- d. $3(x + 5) = 5 - (x - 10)$ one solution

14. Explain, in words, what the graph of the system of linear inequalities would look like? Identify at least *three* ordered pairs that would be solutions to the system. 23

$$x + y \leq 5$$

$$-2x + 3y \geq 6$$

Answers must →
be in this
region and will
vary.



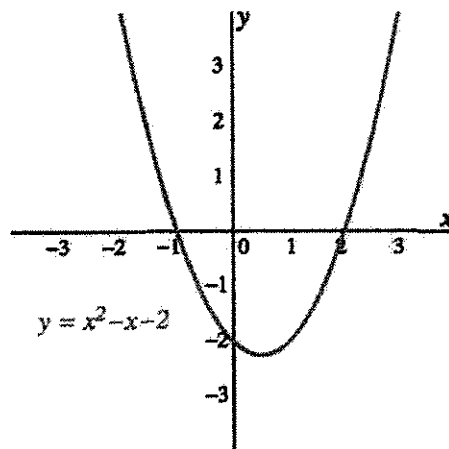
15. The graph of $y = 2x + 5$ is translated up 8 units. Which equation represents the translated graph? 26

- A. $y = 2x + 3$
- B. $y = 2x + 13$
- C. $y = 2x - 13$
- D. $y = 2x - 3$

16. Factor completely: $2x^2y + xy - 6y$. 33

- A. $(2x - 1y)(x + 6)$
- B. $y(2x - 3)(x + 2)$
- C. $(x + 2y)(2x - 3)$
- D. $y(2x - 3)(x - 2)$

17. The function $f(x)$ is graphed on the coordinate plane. 26, 29



What are the zeros?

- A. 3
- B. -1
- C. -2
- D. 2
- E. 0

18. Maddox is attempting to solve the equation: $4(x + 9) = 2(x + 7) + 2$. His steps are shown below. Which initial step identifies an error? 7

Step 1: $4(x + 9) = 2(x + 7) + 2$

Step 2: $4x + 36 = 2x + 14 + 2$

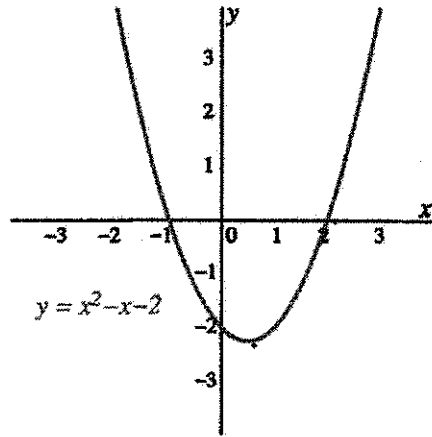
Step 3: $2x + 36 = 16$

Step 4: $2x = 20$ ←

Step 5: $x = 10$

- A. Step 2
 B. Step 3
 C. Step 4
 D. Step 5
19. Philip solved the equation $-(x - 6) = 4(x + 9)$. What is the solution? 7 SB
- A. $x = 10$
 B. $x = -6$
 C. No solution
 D. $x = 0$
20. The equation $y = 2.5x + 0.42$ models the approximate height of a plant in centimeters after x weeks. Which two statements are true about the linear model? 16
- A. The plant grows about 0.42 centimeters each week.
 B. The plant grows about 2.5 centimeters each week.
 C. The initial height of the plant is 2.5 centimeters.
 D. The initial height of the plant is 0.42 centimeters.
 E. The plant grows a total of 2.5 centimeters.

21. Based on the graph of the function, f , which **three** statements are true? 21

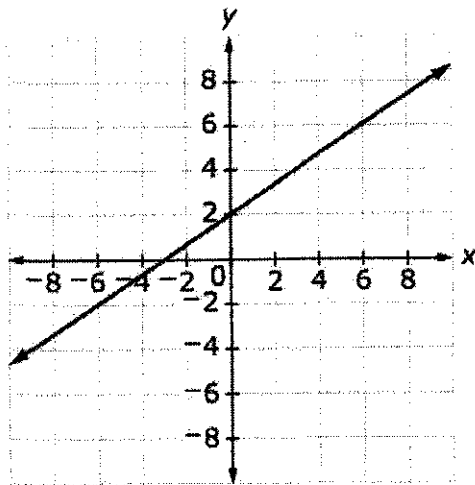


- A. f is increasing on the interval $x < \frac{1}{2}$
- B. f is decreasing on the interval $x < \frac{1}{2}$
- C. f is increasing on the interval $\frac{1}{2} < x < 2$
- D. f is decreasing on the interval $\frac{1}{2} < x < 2$
- E. f is increasing on the interval $x > 2$
- F. f is decreasing on the interval $x > 2$

22. An online company lets you download songs for \$0.99 each after you have paid a \$5 membership fee. Which domain would be most appropriate to calculate the cost to download songs? 14

- A. rational numbers greater than zero
- B. whole numbers greater than or equal to one
- C. integers less than or equal to zero
- D. whole numbers less than or equal to one

23. The function $f(x)$ is represented in the graph below.



$$f(x) = \frac{2}{3}x + 2$$

If $g(x) = 3x - 1$, which of the following comparisons is true? 20

- A. The rate of change of $f(x)$ is greater than the rate of change of $g(x)$.
The y intercept of $f(x)$ is greater than the y intercept of $g(x)$.
- B. The rate of change of $f(x)$ is less than the rate of change of $g(x)$.
The y intercept of $f(x)$ is greater than the y intercept of $g(x)$.
- C. The rate of change of $f(x)$ is greater than the rate of change of $g(x)$.
The y intercept of $f(x)$ is the less than the y intercept of $g(x)$.
- D. The rate of change of $f(x)$ is less than the rate of change of $g(x)$.
The y intercept of $f(x)$ is the less than the y intercept of $g(x)$.

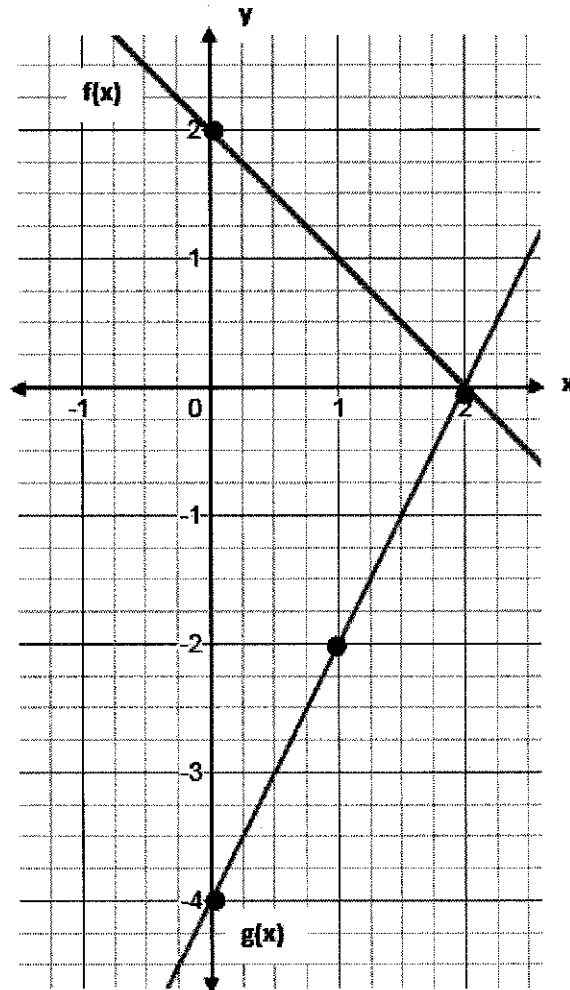
24. At an ice cream shop, the profit, $P(c)$, is modeled by the function $P(c) = 0.87c$, where c represents the number of ice cream cones sold. Which is an appropriate domain for this function? 14

- A. an integer ≤ 0
- B. an integer ≥ 0
- C. a rational number ≤ 0
- D. a rational number ≥ 0

25. A ball was thrown upward into the air. The height, in feet, of the ball above the ground t seconds after being thrown can be determined by the expression $-16t^2 + 40t + 3$. What is the meaning of the 3 in the expression? 1

- A. The ball took 3 seconds to reach its maximum height.
- B. The ball took 3 seconds to reach the ground.
- C. The ball was thrown from a height of 3 feet.
- D. The ball reached a maximum height of 3 feet.

1. The figure shows the graphs of $f(x)$ and $g(x)$. The four indicated points all have integer coordinates.



If $g(x) = k \cdot f(x)$, what is the value of k ? _____

2. The following are equivalent forms of a quadratic equation which each reveal different properties of the function. Match the equation to the property it reveals as written.

$x^2 - 2x - 3$ _____ $(x + 1)(x - 3)$ _____ $(x - 1)^2 - 4$ _____

- A. zeros B. maximum C. minimum D. y-intercept E. slope

3. The only coins that Mary has are dimes and quarters.

- She has a total of 40 coins.
- Her coins have a total value of \$5.50.

Which of the following systems of equations can be used to find the number of dimes (d) and the number of quarters (q) that Mary has?

A. $d + q = 5.50$
 $.10d + .25q = 40$

B. $d + q = 5.50$
 $.25d + .10q = 40$

C. $d + q = 40$
 $.10d + .25q = 5.50$

D. $d + q = 40$
 $.25d + .10q = 5.50$

4. Payton is twice as old as Willy. Beth is one year older than Willy. If Beth's age is represented by B , which of the following represents the ages of Payton and Willy respectively?

A. $\frac{1}{2}(B - 1)$; $B - 1$

B. $\frac{1}{2}(B + 1)$; $B + 1$

C. $2(B - 1)$; $B - 1$

D. $2(B + 1)$; $B + 1$

E. $2B$; $B - 1$

5. A company sells jeans and T-shirts. J represents jeans and T represents T-shirts in the equations below:

$$2J + T = \$50$$

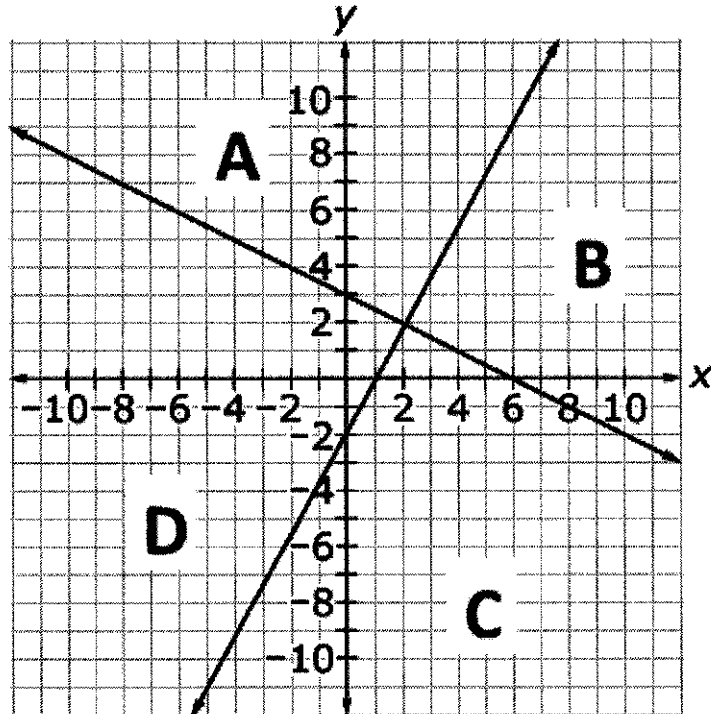
$$J + 2T = \$40$$

What is the difference between the price of the jeans and T-shirt?

- A. \$10
 B. \$20
 C. \$30
 D. \$70
 E. \$90
6. Given the system of linear inequalities:

$$y \leq \frac{-1}{2}x + 3$$

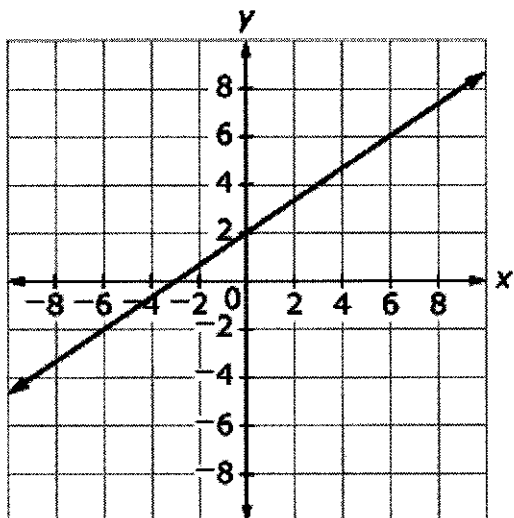
$$y \geq 2x - 2$$



Choose the region of the graph that contains the solution set of the system.

- A. A
 B. B
 C. C
 D. D

7. Choose three of the ordered pairs that are solutions to the equation represented by the graph.

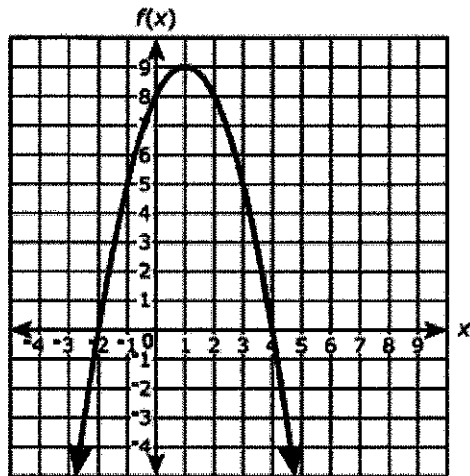


- A. (3, 4) D. (9, 8)
- B. (-6, -2) E. (-8, -2)
- C. (4, 3) F. (8, 9)
8. Rewrite the expression $3x(x + 2) + 2(x + 2) - 3(x + 2)$ to find the coefficients of each term. Write the coefficients in the appropriate boxes.

$$\boxed{} x^2 + \boxed{} x + \boxed{}$$

9. The graph of $y = 3x - 2$ is translated up 5 units. What is the equation of the new graph?
- A. $y = 8x - 2$
- B. $y = 3x + 3$
- C. $y = 3x - 7$
- D. $y = 3x + 5$

10. The figure shows the graph of the function $f(x) = -x^2 + 2x + 8$.



For which interval(s) is $f(x) < 0$. Select all that apply.

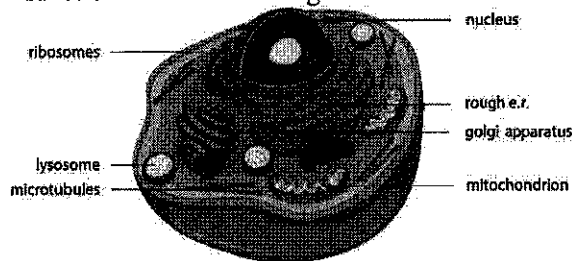
- A. $x > -2$
 - B. $x > 4$
 - C. $x < -2$
 - D. $-2 > x > 4$
 - E. $-2 < x < 4$
11. A local theater sells admission tickets for \$9.00 on Thursday nights. At capacity, the theater holds 100 customers. The function $M(n) = 9n$ represents the amount of money the theater takes in on Thursday nights, where n is the number of customers. What is the domain of $M(n)$ in this context?
- A. all whole numbers
 - B. all non-negative rational numbers
 - C. all non-negative integers that are multiples of 9
 - D. all non-negative integers less than or equal to 100

1C.1 Functions and Interactions of Organelles

All living organisms on Earth are made up of microscopic structures called **cells**. There are many types of cells. Some organisms are unicellular, while other organisms, including humans, are multicellular. Cells generally share a similar structure.

Cell Structure

Most cells contain smaller structures, called **organelles**. Organelles are groups of complex molecules that function like "organs" of a cell. Like the organs of the body, organelles of a cell perform different functions. Some of the organelles found in cells are shown in the diagram of the animal cell below.



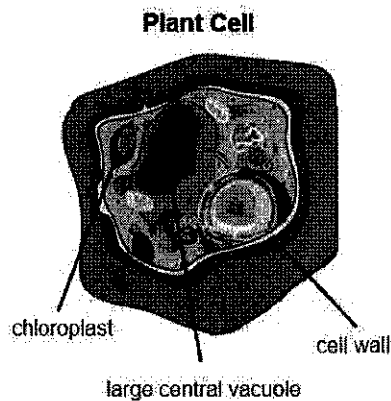
Although some cells contain a different assortment of organelles than others, a list of the organelles commonly found in eukaryotic cells appears below:

- **Centrosome** — an organelle near the cell nucleus that helps organize the microtubules in the cell's cytoplasm. The centrosome is made up of two cylindrical organelles called **centrioles** surrounded by proteins. During cell division, the centrosome organizes the cytoskeletal structure called the **mitotic spindle** that is needed for the cell to divide.
- **Cytoplasm** — the clear, gelatinous material found inside cells that supports and holds cellular organelles. It is the site of many cellular processes. The cytoplasm contains a cytoskeleton which helps to maintain the cell's shape and structure.
- **Cytoskeleton** — a cellular scaffolding that is made up of microfilaments and microtubules. The cytoskeleton of a cell helps the cell maintain its shape, protects the cell, enables the cell to move, and plays important roles in both intracellular transport and cellular division.
- **Cell membrane** — a selectively permeable lipid bilayer that acts as a boundary layer around the cytoplasm, thus separating cells from their outside environments. In addition to being able to recognize chemical signals, the cell membrane is selectively permeable to chemicals and controls which molecules enter and leave the cell. Nutrients first enter the cell through the cell membrane.
- **Cell wall** — a secretion of the cell membrane that is found in plants, fungi, bacteria, and many protists. It provides protection from physical injury and provides structural support.
- **Chloroplast** — the food producer in a plant cell. During a process known as *photosynthesis*, chloroplasts absorb light energy from the Sun and produce food in the form of glucose sugar from carbon dioxide and water.
- **Chromatin** — a collection of DNA and proteins that contains the hereditary information of an organism. The chromatin is loosely packed during interphase to allow for easy access for gene expression. Prior to cell division, the chromatin condenses to form chromosomes.
- **Endoplasmic reticulum (ER)** — transports proteins within cells. The endoplasmic reticulum is also the location of lipid synthesis on the *smooth* side, and proteins are synthesized on the ribosome-studded, *rough ER*.
- **Golgi apparatus** — processes and transports wastes (and other materials) out of the cell by a process called *exocytosis*. In addition to playing an important role in waste disposal, the Golgi apparatus also processes, sorts, and modifies proteins in cells.

- **Lysosome** — a membrane-bound organelle found in animal cells that contains enzymes specialized to break down ingested materials, secretions, and wastes. These wastes (and other materials) may then be processed and transported out of the cell by the Golgi apparatus.
- **Microfilaments** — a major component of a cell's cytoskeleton. They function in determining cellular shape, as well as aiding in cellular movement. They are important for the formation of many different cellular projections that can allow a cell to move through its environment.
- **Microtubules** — components of cilia and flagella as well as the cytoskeleton of a cell. Microtubules are hollow rods that help give a cell its shape and can also aid the cell in locomotion and the transport of materials through the cell.
- **Mitochondria** — take in nutrients, break them down and create energy (or ATP) for the cell. The inner membrane of a mitochondrion is folded into **cristae**. The cristae increase the surface area of the inner membrane and enhance the mitochondrion's ability to produce ATP through the process of cellular respiration
- **Nuclear membrane** — double lipid bilayer that encloses the genetic material of a cell. It separates the nucleus of a cell from the cytoplasm. There are nuclear pores within the nuclear membrane that allow for the exchange of materials between the nucleus and the cytoplasm. The nuclear membrane is sometimes called the nuclear envelope.
- **Nucleus** — the "brain" of the cell. It contains the nucleolus and the cell's DNA.
- **Nucleolus** — found within the nucleus of a cell and is responsible for synthesizing ribosomes and ribosomal RNA.
- **Ribosome** — RNA and protein complex that is found in all cells. During translation, ribosomes join amino acids together to form proteins.
- **Vacuole** — stores water and ingested food in a fluid sack. In plant cells, the central vacuole produces *turgor pressure* against the cell wall for cellular support.

Plant Cells

Plant cells contain some structures that are different from animal cells.



Plant cells have chloroplasts, a cell wall, and a large central vacuole that are not found in animal cells.

Organelles present in plant cells include:

- The **chloroplasts** are the food producers in a plant cell. During a process known as *photosynthesis*, chloroplasts absorb light energy from the Sun and produce food in the form of glucose sugar from carbon dioxide and water.
- A large, **central vacuole** stores water and ingested food in a fluid sack and helps remove waste from the cell. The central vacuole in plants produces turgor pressure against the cell wall for cellular support. (Vacuoles may be present in certain animal cells. However, the vacuoles found in animal cells only serve minor functions. They are also very small in comparison and tend to be more numerous when present.)

- The **cell wall** is a secretion of the cell membrane; it provides protection from physical injury and, with the vacuole, it provides structural support. Since it is made primarily of cellulose, it gives plant cells a structure that is more rigid than that of animal cells.

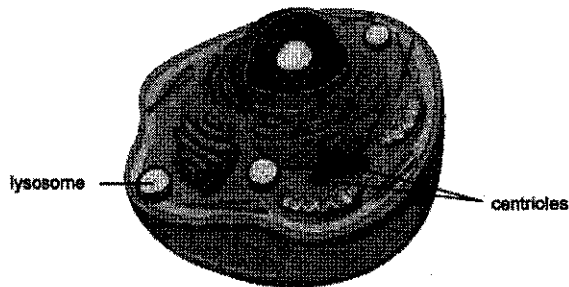
The video below discusses the structure of a plant cell and the functions of organelles found within plant cells. To watch the video, click on the play button on the gray bar below.

Clip provided by Education Clip Library with permission from ITN Source

Cells within multicellular organisms are highly specialized for the specific functions they perform. So, the type and number of organelles present can vary greatly. For example, certain plant cells do not contain chloroplasts. Cells located in the roots are not exposed to sunlight and do not photosynthesize. Therefore, chloroplasts are not necessary. The same is true for cells that compose animals and all other complex organisms.

Animal Cells

Animal cells contain some structures that are different from plant cells.



Animal cells possess lysosomes and centrioles, which plant cells do not.

Organelles present in animal cells include:

- **Lysosomes** contain enzymes which digest food particles, excess or old organelles, and engulfed foreign particles, such as viruses or bacteria.
- The **centrioles** play a major role organizing the mitotic spindle during cell division.

All cells are surrounded by some type of membrane. Plant cells have a cell membrane and a cell wall, while animal cells only have a cell membrane. *It is the lack of a cell wall in animal cells that allowed animals to develop greater diversity of cell types, tissues, and organs.*

Organelles Interact to Fulfill Functions

In all types of cells, organelles must interact with one another to fulfill the functions needed to sustain life.

Growth

Cells of multicellular organisms **grow** as the organism grows. As cells grow, they require new proteins and lipids. Proteins are synthesized by ribosomes using instructions from DNA in the nucleus. After proteins are synthesized, they are modified in the rough endoplasmic reticulum and packaged in the Golgi apparatus,

which directs them to their destination. Lipids that will be inserted into the cell membrane are synthesized by smooth endoplasmic reticulum.

Division

In multicellular organisms, cells **divide** so an organism may grow or repair damaged tissue. Cell division requires the interaction of the centrosome and cytoskeleton, which work together to ensure that copies of the cell's DNA are correctly divided among two daughter cells.

Nutrient Acquisition

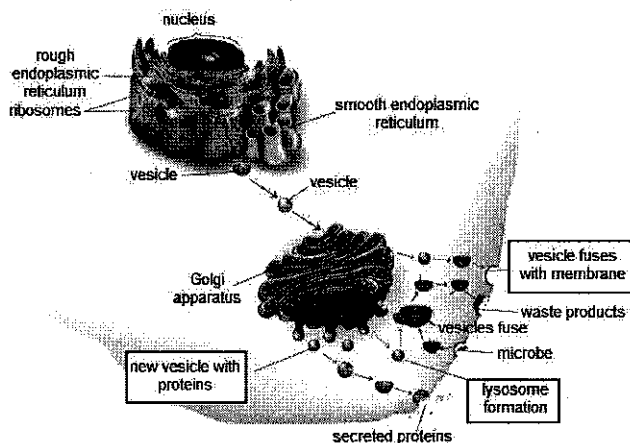
Cells must **acquire nutrients** in order to perform life processes. Cells take in nutrients with the help of specialized proteins embedded in their membranes. These proteins are produced and inserted into the membrane through a process that involves the ribosomes, endoplasmic reticulum, and the Golgi apparatus. Once within the cell, nutrients are often transported along the cytoskeleton in vesicles formed by the cell membrane.

Extraction of Energy

Cells use the nutrients that they acquire to **extract energy**. Nutrients that enter the cell across the cell membrane may be partially broken down by proteins in the cytoplasm. Components of these nutrients are sent on to the mitochondria, where they are further broken down to make ATP. ATP from the mitochondria is sent to all organelles in the cell to provide them with energy.

Waste Disposal

After a cell has acquired and used nutrients for cellular processes, the cell must be able to **dispose of waste materials**. Some wastes can be directly transported across the cell membrane. In animal cells, waste products are typically broken down by lysosomes. Lysosomes contain enzymes specialized to degrade waste material. These enzymes are originally produced by ribosomes and the rough endoplasmic reticulum. They are then packaged and released in membrane-bound vesicles by the Golgi apparatus. These vesicles mature into lysosomes, which move throughout the cell and pick up waste products or other cellular debris. After a lysosome has broken down the waste material, it fuses with the cell membrane to release its contents outside of the cell.



The nucleus, ribosomes, endoplasmic reticulum, and Golgi apparatus interact to synthesize proteins and lysosomes.

Structure Affects Function

The structure of organelles enables them to perform their functions. Several examples are discussed below.

- The folded cristae of a mitochondrion greatly increase the surface area of the inner membrane where cellular respiration takes place. As a result, each mitochondrion can produce more ATP than if cristae were absent.
- The cell membrane is composed of a double layer of lipid and protein molecules. This specific arrangement turns the cell membrane into a gate that allows precise control over which substances enter or leave the cell.
- In plants, the cell wall is a rigid outer layer made primarily of carbohydrates. Unlike the pliable cell membrane, the cell wall is strong enough to prevent plant cells from collapsing when they lose water.

Surface area plays an important role in the functions of the cell. Many of the reactions that sustain life take place on surfaces inside the cell. Structures that result in a larger surface area increase the number of reactions that can take place on them.

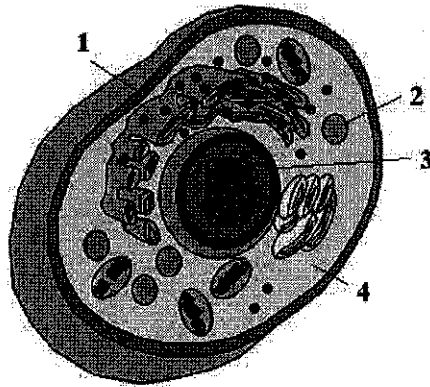
BIO 1C1

Question 1 .

Which of the following statements correctly describes how two cellular structures interact to produce energy for a cell?

- A. Mitochondria synthesize enzymes and deliver them to the chloroplast to produce cellular energy.
- B. Chloroplasts synthesize and release enzymes that are absorbed by the nucleus to produce cellular energy.
- C. Ribosomes synthesize proteins that are used as enzymes in the mitochondria to produce cellular energy.
- D. Vacuoles synthesize proteins that are broken down by the ribosomes to produce cellular energy.

Question 2 .



In the above diagram of an animal cell, what is the function of structure 3?

- A. gives the cell structural support, encloses the cytoplasm, and helps regulate what enters and exits the cell
- B. serves as the control center of the cell and stores the cell's genetic information
- C. contains the cell's organelles and is the site where many cellular processes are performed
- D. contains digestive enzymes that help rid the cell of old organelles, food particles, and other wastes

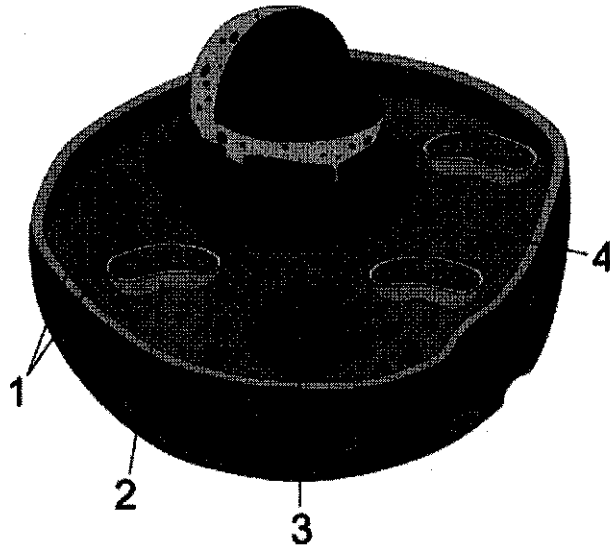
Question 3 .

The brain regulates all functions and processes of an animal. At the cellular level, the _____ regulates all cell activity.

- A. nucleus
- B. mitochondrion
- C. centriole
- D. ribosome

Question 4 .

A diagram of an animal cell is shown below.



What is the function of organelle 2?

- A. to aid in protein synthesis by joining amino acids together to form polypeptides
- B. to store ions, create and store steroids, and synthesize and package proteins
- C. to collect, package, and distribute molecules produced by the cell
- D. to supply the cell with energy, in the form of ATP, through the process of cellular respiration

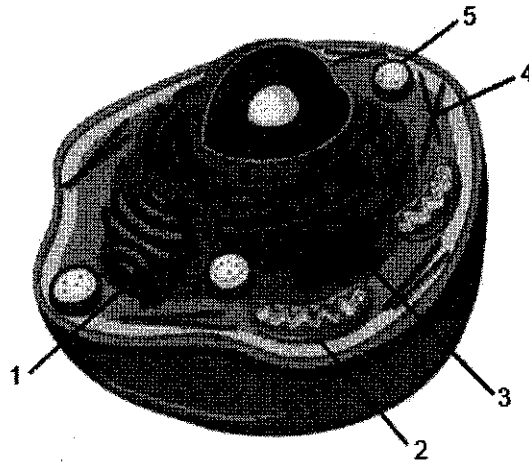
Question 5 .

Which statement best describes how vacuoles and lysosomes interact in an animal cell?

- A. Lysosomes contain enzymes that digest the contents of vacuoles.
- B. Lysosomes produce glucose, which is converted to energy by vacuoles.
- C. Vacuoles transport proteins to be packaged and modified by lysosomes.
- D. Vacuoles direct lysosomes to synthesize proteins.

Question 6 .

The image below shows an animal cell.



What is the organelle labeled 3 in the image, and how does it interact with other parts of the cell to perform a function?

- A. It is a lysosome, and it interacts with the part labeled 5 to secrete waste materials from the cell.
- B. It is a centrosome, and it interacts with the part labeled 4 to form a structure that helps the cell divide.
- C. It is a centrosome, and it interacts with the part labeled 2 to help the cell make energy.
- D. It is a lysosome, and it interacts with part labeled 1 to form a structure that breaks down waste products.

Question 7 .

The Golgi complex in a cell interacts with

- A. mitochondria by sending them nutrients for the production of ATP.
- B. the endoplasmic reticulum by producing ribosomes for the rough side of the structure.
- C. the cell membrane by packaging wastes for release outside the cell.
- D. the nucleus by receiving genetic instructions for the construction of proteins.

Question 8 .

Eukaryotic cells contain organelles that harvest energy from organic compounds to make ATP. ATP is the main form of energy used by cells. Which cell organelles are responsible for making most of the cell's ATP?

- A. chloroplasts
- B. endoplasmic reticulum
- C. mitochondria
- D. lysosomes

Question 9 .

Directions: Drag the tiles to the correct boxes to complete the pairs.

Match each cell structure with the city structure to which it is most similar in function.

mitochondrion	endoplasmic reticulum	Golgi apparatus	nucleus	cell membrane
city hall	↔			
security gate	↔			
factory	↔			
post office	↔			
power plant	↔			

Question 10 .

The mitochondria of eukaryotic cells release energy from glucose molecules through the process of cellular respiration. Before cellular respiration can occur, however, glucose from another part of the cell must be transported to the mitochondria.

Where in a plant cell is glucose produced?

- A. in the nucleus
- B. in the ribosomes
- C. in the vacuoles
- D. in the chloroplasts

Question 11 .

Which of the following describes a function of a vacuole?

- I. storage of water
- II. storage of cellular waste
- III. protein synthesis
- IV. structural support

- A. II and III only
- B. I, II, III, and IV
- C. IV only
- D. I, II, and IV only

Question 12 .

Microfilaments are a component of a cell's cytoskeleton and are made of the protein actin. They are important for giving a cell its shape and also aid in _____.

- A. protein synthesis
- B. DNA replication
- C. cellular movement
- D. energy conversion

Question 13 .

Directions: Select each correct answer. More than one answer may be correct.

The skeletal system provides structure and support for animals. Which of the following provides structure and support for a plant cell?



Question 14 .

The circulatory system distributes oxygen and nutrients to the many cells in an animal's body. At the cellular level, the organelle that is responsible for transporting important substances through the cell is the

- A. lysosome.
- B. endoplasmic reticulum.
- C. nucleus.
- D. cell wall.

Question 15 .

The plasma membrane of a cell regulates substances that enter and exit the cell. The plasma membrane also transmits cellular signals and protects the cell from its external environment. Which of the following best describes how the structure of the plasma membrane relates to its function?

- A. It is made of charged particles that transition between cells to transport materials and signals.
- B. It is made of a phospholipid bilayer that is embedded with proteins to make it selectively permeable.
- C. It is made of a single layer of flexible, permeable lipids to allow nutrients to enter easily.
- D. It is made of rigid, interlocking proteins to provide protection and structure.

Question 16 .

The stomach is the organ in animals that contains a mixture of digestive enzymes and is responsible for breaking down food. What organelle carries out the same function at the cellular level?

- A.** endoplasmic reticulum
- B.** mitochondrion
- C.** lysosome
- D.** vacuole

Answers

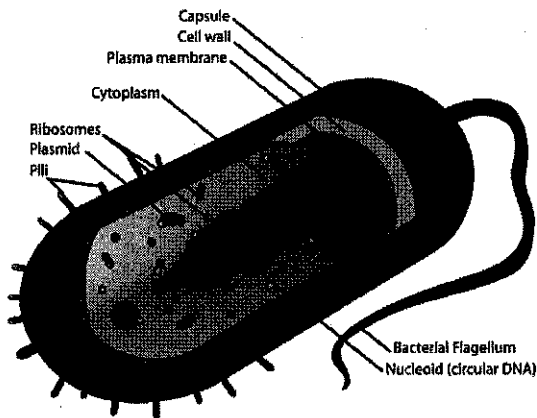
1. C
2. B
3. A
4. D
5. A
6. B
7. C
8. C
9. --
10. D
11. D
12. C
13. --
14. B
15. B
16. C

1.C.2 Prokaryotes vs. Eukaryotes

The cell is the fundamental unit of structure and function in all living organisms. Cells can be classified into two major types: prokaryotes and eukaryotes.

Prokaryotes

Prokaryotic cells do not have a true nucleus or other membrane-bound organelles. The word *prokaryote* comes from the combination of the Greek (*pro-*) "before" and (*karyon*) "kernel" or "nucleus."



This is a diagram of a typical bacterial cell. Notice that the DNA is not enclosed within a nucleus.

Image courtesy of Wikipedia.

Prokaryotic organisms differ from eukaryotic organisms in complexity and structure.

- Except for a few species, most prokaryotic organisms are unicellular, or single-celled.
- All prokaryotes lack a well-defined nucleus and are much smaller and simpler than eukaryotic organisms.
- Although prokaryotes do have genetic material (DNA), their DNA is not separated from the rest of the cell by a nuclear membrane. Also, prokaryotic DNA is not arranged in chromosomes, and it tends to be circular rather than linear.
- Prokaryotic cells do not contain mitochondria, but they can get energy from sunlight or chemicals in their environments.
- Prokaryotes have simpler stages of growth and development.
- Simple organisms, such as bacteria, blue-green algae, and archaea, are examples of prokaryotes.

Eukaryotes

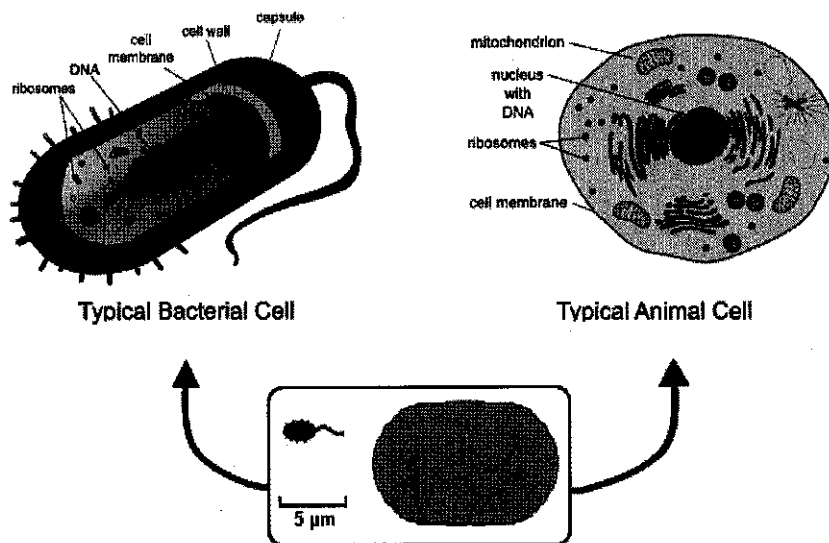
Eukaryotic cells have nuclei and organelles that are surrounded by membranes. The word *eukaryote* from the combination of the Greek (*eu-*) "true" and (*karyon*) "kernel" or "nucleus."

Eukaryotic organisms are more complex than prokaryotes.

- Most eukaryotic organisms are multicellular, or multi-celled.
- The genetic material (DNA) in eukaryotic cells is organized into chromosomes and separated from the cytoplasm by the nuclear membrane.
- Cells in multicellular eukaryotes can be organized into tissues, organs, and organ systems.
- Developmental stages of single-celled eukaryotes are more complex than prokaryotic stages, and developmental stages of multi-celled eukaryotes are even more complex.
- Protozoa, fungi, plants, and animals are all examples of eukaryotes.

Comparison of Prokaryotes and Eukaryotes

There are many differences between eukaryotes and prokaryotes.



The top portion of this diagram points out the differences between a bacterium (prokaryote) and a typical animal cell (eukaryote). Prokaryotic cells are far simpler and smaller than eukaryotic cells. Eukaryotic cells can be anywhere between 5—500x as large as prokaryotic cells

Adapted from images courtesy of NIH and Wikipedia.

The following table provides a more detailed comparison of prokaryotic and eukaryotic cells.

Characteristic	Prokaryote	Eukaryote
Cells are enclosed within a plasma membrane.	✓	✓
Cells contain DNA.	✓	✓
Cells contain ribosomes.	✓	✓
Cell membranes are surrounded by a cell wall.	✓	plants, most fungi, and some protists
Cells contain a nucleus.		✓
Includes unicellular organisms.	✓	✓
Includes multicellular organisms.		✓
All cells are able to perform all functions necessary for life.	✓	

BIO 1C2 Eukaryotic and Prokaryotic Cells

Question 1 .

Michelle has been given a microscope slide that contains a eukaryotic cell and a prokaryotic cell. What should she look for to distinguish the eukaryotic cell from the prokaryotic cell?

- A. cytoplasm
- B. ribosomes
- C. nucleus
- D. cell membrane

Question 2 .

Dr. Roberts examined the cells of four different organisms for the presence of various cellular structures. His observations are recorded in the table below. (An "X" indicates that the structure is present in the cell.)

	cell membrane	cell wall	chloroplasts	mitochondria	nucleus	ribosomes	vacuoles
1	X	X	X	X	X	X	X
2	X			X	X	X	X
3	X	X				X	
4	X			X	X	X	

Using the information in the table, which of the cells most likely came from a plant?

- A. 1 and 3 only
- B. 2 and 4 only
- C. 3 only
- D. 1 only

Question 3 .

Janice is analyzing the results of an investigation she performed to determine the origin of four different cells. Each cell was taken from an animal, a plant, or a fungus. The table below shows the data that Janice collected during her investigation.

	Cell 1	Cell 2	Cell 3	Cell 4
Chloroplasts	present	absent	absent	absent
Ribosomes	present	present	present	present
Cell Wall	present	absent	present	present
Multiple Nuclei	absent	absent	present	absent
Cell Membrane	present	present	present	present

Based on the information in the table, which cell must have been taken from a fungus?

- A. Cell 4
- B. Cell 2
- C. Cell 1
- D. Cell 3

Question 4 .

A student in science class is using a light microscope to determine if a cell is prokaryotic or eukaryotic. Identification of which of the following cell parts would allow the student to definitively conclude that the cell is eukaryotic?

- A. ribosome
- B. nucleus
- C. DNA
- D. plasma membrane

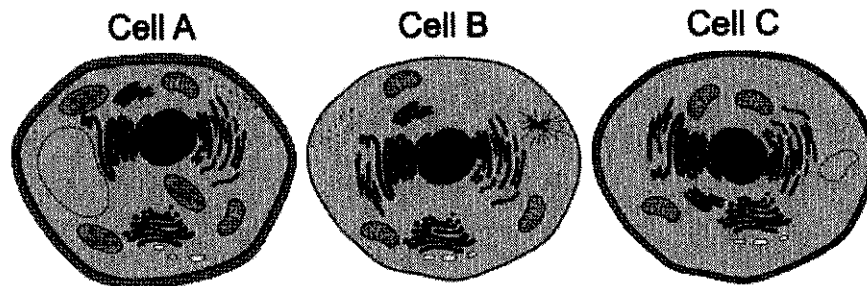
Question 5 .

Which of the following cell structures can be found in prokaryotic cells?

- A. chloroplasts
- B. ribosomes
- C. mitochondria
- D. nuclei

Question 6 .

The image below shows three different types of cells.



Which correctly identifies each cell?

- A. Cell A is a fungal cell, cell B is an animal cell, and cell C is a plant cell.
- B. Cell A is a plant cell, cell B is an animal cell, and cell C is a fungal cell.
- C. Cell A is a plant cell, cell B is an fungal cell, and cell C is a animal cell.
- D. Cell A is a animal cell, cell B is an fungal cell, and cell C is a plant cell.

Question 7 .

Plant cells and animal cells possess many of the same organelles. Which of the following organelles, however, would be indicative of a plant cell rather than an animal cell?

- A.** chloroplast
- B.** ribosome
- C.** mitochondrion
- D.** nucleus

Question 8 .

Which of the following statements correctly supports the conclusion that eukaryotic cells are more complex than prokaryotic cells?

- A.** Only eukaryotic cells contain membrane-bound organelles.
- B.** Only eukaryotic cells can be seen using a microscope.
- C.** Only eukaryotic cells contain DNA and RNA.
- D.** Only eukaryotic cells contain ribosomes.

Question 9 .

What feature do all eukaryotic and prokaryotic cells share?

- A.** a cell wall
- B.** membrane-bound organelles
- C.** DNA
- D.** a nucleus

Question 10 .

Directions: Select ALL the correct answers.

Which of the following can be found in both prokaryotic cells and eukaryotic cells?

- ribosomes
- nucleus
- mitochondria
- DNA
- RNA
- vacuoles

Question 11 .

Which of the following is true about cells?

- A.** In general, eukaryotic cells do not have a true nucleus or membrane-bound organelles, whereas prokaryotic cells contain both a nucleus and organelles enclosed by membranes.
- B.** Neither prokaryotic cells nor eukaryotic cells ever contain both a true nucleus that is well-defined and organelles that are separated from the cytoplasm by membranes.
- C.** Both eukaryotic cells and prokaryotic cells always contain both a true nucleus that is well-defined and organelles that are separated from the cytoplasm by membranes.
- D.** In general, prokaryotic cells do not have a true nucleus or membrane-bound organelles, whereas eukaryotic cells contain both a nucleus and organelles enclosed by membranes.

Question 12 .

Which of the following best describes a difference between prokaryotic and eukaryotic cells?

- A.** Prokaryotic cells contain RNA that codes for genetic information, but eukaryotic cells contain DNA only.
- B.** Eukaryotic cells are more complex than prokaryotic cells because eukaryotic cells contain membrane-bound organelles.
- C.** Eukaryotic cells contain ribosomes that help synthesize proteins, but prokaryotic cells do not need these structures.
- D.** Prokaryotic cells are larger than eukaryotic cells because they must perform all life processes in a single cell.

Answers

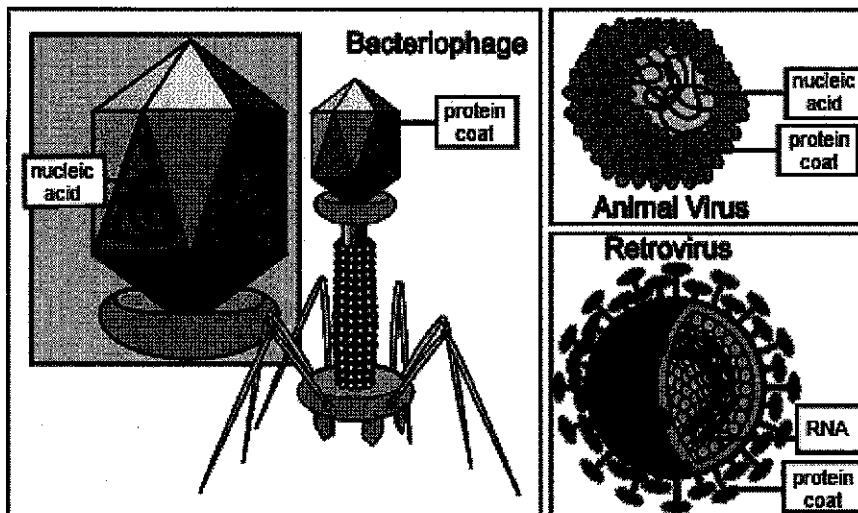
1. C
2. D
3. D
4. B
5. B
6. B
7. A
8. A
9. C
10. --
11. D
12. B

1C.3 Viruses

The characteristics of viruses differ greatly from those of living organisms. Viruses are not cells; they contain a nucleic acid core surrounded by a protein coat and are only capable of replicating while inside of a host cell.

Virus Structure & Reproduction

All viruses are surrounded by a protective coat made of proteins. They contain some form of nucleic acid, either DNA or RNA, within their protective coats. Some viruses also have binder proteins on their surface. After infecting a host cell, a virus typically splices its own nucleic acid into that of the host cell. It then uses the cell's ribosomes and organelles to make copies of all the components needed to produce more viruses. The following diagram shows three common types of viruses.



Adapted from image courtesy of the National Institutes of Health

There are two cycles of viral reproduction: the lytic cycle and the lysogenic cycle. In the lytic cycle, a virus will continue to make copies of itself until the host cell bursts. In this way, the virus is able to spread to other cells. Due to this method of reproduction, viruses can cause many diseases in living organisms. However, their ability to insert the nucleic acid they carry into a host cell (which they do during the lysogenic cycle) has made them useful tools for genetic research and **gene therapy**, the process of replacing a cell's defective genes with functioning ones.

Viruses vs. Cells

Characteristics of Cells

- Cells are alive, and they are the basic units of all life.
- Cells can reproduce on their own.
- Cells possess organelles and ribosomes.
- Cells have their own energy metabolism.

- Cells are surrounded by a cell membrane.
- Cells are much larger than viruses.

Characteristics of Viruses

- Viruses are not alive.
- Viruses must use a host cell to reproduce.
- Viruses do not possess organelles or ribosomes.
- Viruses do not have their own energy metabolism.
- Viruses are surrounded by a protein coat.
- Viruses are extraordinarily small.

Characteristics of Both Cells & Viruses

- Both cells and viruses contain some form of nucleic acid (DNA or RNA).
- Both cells and viruses can infect host cells.

BIO 1C3 Virus Questions

Question 1 .

One of the main characteristics of living things is that living things are able to reproduce. Viruses are also able to reproduce, but only by using the reproductive mechanisms of what?

- A. RNA
- B. a host cell
- C. binary fission
- D. DNA

Question 2 .

All known viruses can only reproduce inside of host cells. What is one reason why viruses must use living cells to reproduce?

- A. Viruses do not have genetic material, such as DNA, that is found in living cells.
- B. A virus's ribosomes require substances found in living cells to function.
- C. Viruses do not have machinery, such as ribosomes, needed to make proteins.
- D. A virus's nucleus does not contain the machinery needed to replicate DNA.

Question 3 .

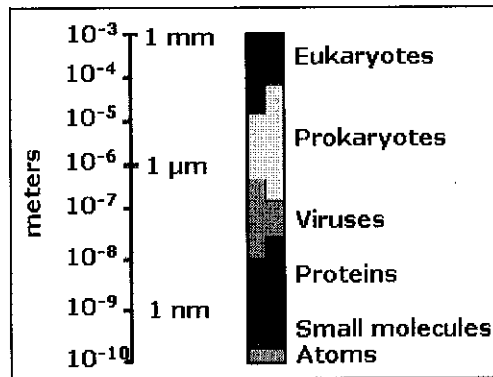
Which description of a virus is correct?

- A. A virus has no cell structure, but it has genes.
- B. A virus is a non-cellular structure which replicates itself and its genes.
- C. A virus is a cellular organism which transfers its genes into the host cells.
- D. A virus has no genes, but it has a cell structure.

Question 4 .

Directions: Drag each tile to the correct box.

The diagram below shows the general sizes of atoms, small molecules, proteins, viruses, prokaryotic cells, and eukaryotic cells.



Viruses are non-cellular organisms that differ in structure and complexity from prokaryotic and eukaryotic cells. Arrange the organisms shown below from largest to smallest.

viruses eukaryotic cells prokaryotic cells

□ > □ > □

Question 5 .

A scientist isolates a disease-causing particle. Which of the following properties would indicate that the particle is a virus and not a bacterium?

- A. an absence of cellular machinery
- B. a size greater than 400 nm
- C. the ability to reproduce independently
- D. the presence of DNA

Question 6 .

A scientist was studying how a specific virus infects skin cells. In a lab, the scientist exposed a group of skin cells to the virus. Over time, the number of living skin cells in the group decreased.

Which statement explains why this change occurred?

- A. Viruses reproduce outside of cells, creating harmful chemicals that kill the cells.
- B. Viruses reproduce inside of their host cells, eventually killing the cells.
- C. Viruses reproduce before they enter cells, and the new viruses infect these cells.
- D. Viruses eat living cells to provide energy for reproduction.

Question 7 .

Both viruses and cells are able to replicate their genetic material. What is the main difference in their replication processes?

- A.** Viruses can replicate independently, whereas cells require assistance.
- B.** Viruses require host cells, whereas cells provide their own replication mechanisms.
- C.** Viral replication always takes longer than the replication of cellular genetic material.
- D.** Viral replication does not use any enzymes, whereas cells use enzymes during the replication process.

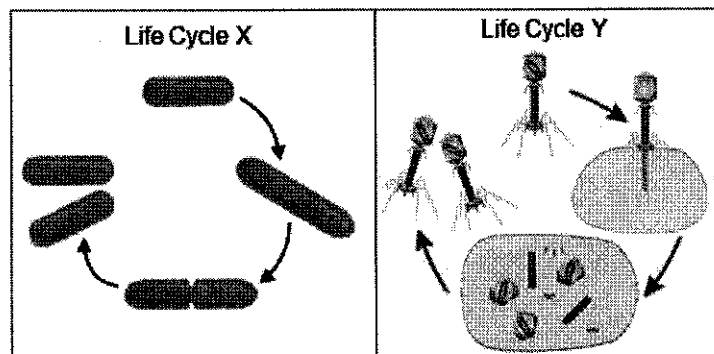
Question 8 .

Cells are the basic units of life. Viruses differ from cells in many key ways. Which of the following is true?

- A.** Cells contain organelles, whereas viruses do not contain organelles.
- B.** Cells cannot maintain homeostasis, whereas viruses can maintain homeostasis.
- C.** Cells contain nucleic acids, whereas viruses do not contain nucleic acids.
- D.** Cells do not contain ribosomes, whereas viruses do contain ribosomes.

Question 9 .

The diagram below shows two different types of life cycles that occur at the microscopic level. Each shows a single occurrence of a life cycle.



Which of the following is true?

- A.** Both life cycle X and life cycle Y must represent virus life cycles because only viruses can reproduce
- B.** Life cycle Y must represent a virus life cycle because a host cell is required for reproduction.
- C.** Life cycle X must represent a virus life cycle because it is able to reproduce by splitting in two.
- D.** Neither life cycle X nor life cycle Y can represent a virus life cycle because both result in multiple offspring.

Question 10 .

Which of the following statements regarding the genetic material of cells and viruses is true?

- A. The nucleotides found in cells are different from the nucleotides found in viruses.
- B. The characteristics of cells are encoded in genes, but viruses do not have their own genes.
- C. Viral genes may be encoded by DNA or RNA, but cellular genes are always encoded by DNA.
- D. The genes of both viruses and cells are enclosed within a nucleus.

Question 11 .

Both viruses and cells contain

- I. nuclei.
- II. genetic material.
- III. mitochondria.
- IV. cell membranes.

- A. II and III only
- B. I, II, III and IV
- C. I and II only
- D. II only

Question 12 .

Which of the following best describes viral reproduction?

- A. The genetic material of a virus enters a living host cell and combines with the cell's nucleotides in order to form a hybrid cell that is capable of asexual reproduction.
- B. The chromosomes of a virus line up and condense into rod-like structures inside of the virus's capsid, then slowly divide as a viral envelope forms around each chromosome.
- C. The genetic material of a virus enters a living host cell and takes over the translational and transcriptional mechanisms of the cell in order to replicate the virus's nucleic acids.
- D. The chromosomes of a virus replicate themselves inside of the virus's capsid, then line up and slowly divide as a viral envelope forms around each set.

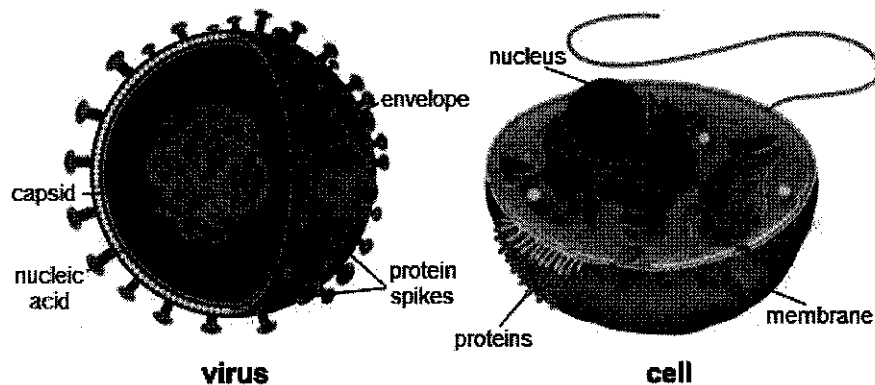
Question 13 .

A virus reproduces by

- A. binary fission.
- B. releasing spores.
- C. converting RNA to DNA.
- D. taking over host cells.

Question 14 .

The image below shows a virus and a cell with some of their features labeled.



What is one way that the structure of a virus differs from that of a cell?

- A. Viruses do not have organelles needed to replicate.
- B. Viruses do not have their own genetic material.
- C. Viruses do not have molecules that interact with cells.
- D. Viruses do not have a protective outer covering.

Question 15 .

Both viruses and cells are able to replicate their genetic material. What is the main difference in their replication processes?

- A. Viral replication always takes longer than the replication of cellular genetic material.
- B. Viral replication does not use any enzymes, whereas cells use enzymes during the replication process.
- C. Viruses can replicate independently, whereas cells require assistance.
- D. Viruses require host cells, whereas cells provide their own replication mechanisms.

Answers

1. B
2. C
3. A
4. --
5. A
6. B
7. B
8. A
9. B
10. C
11. D
12. C
13. D
14. A
15. D

Source: Mississippi Practice Test

Read the passage. Then answer the questions that follow.

Excerpt from **Emma**

by Jane Austen

1 Emma Woodhouse, handsome, clever, and rich, with a comfortable home and happy disposition, seemed to unite some of the best blessings of existence; and had lived nearly twenty-one years in the world with very little to distress or vex her.

2 She was the youngest of the two daughters of a most affectionate, indulgent father; and had, in consequence of her sister's marriage, been mistress of his house from a very early period. Her mother had died too long ago for her to have more than an indistinct remembrance of her caresses; and her place had been supplied by an excellent woman as governess, who had fallen little short of a mother in affection.

3 Sixteen years had Miss Taylor been in Mr. Woodhouse's family, less as a governess than a friend, very fond of both daughters, but particularly of Emma. Between them it was more the intimacy of sisters. Even before Miss Taylor had ceased to hold the nominal office of governess, the mildness of her temper had hardly allowed her to impose any restraint; and the shadow of authority being now long passed away, they had been living together as friend and friend very mutually attached, and Emma doing just what she liked; highly esteeming Miss Taylor's judgment, but directed chiefly by her own.

4 The real evils, indeed, of Emma's situation were the power of having rather too much her own way, and a disposition to think a little too well of herself; these were the disadvantages which threatened alloy to her many enjoyments. The danger, however, was at present so unperceived, that they did not by any means rank as misfortunes with her.

5 Sorrow came—a gentle sorrow—but not at all in the shape of any disagreeable consciousness.—Miss Taylor married. It was Miss Taylor's loss which first brought grief. It was on the wedding-day of this beloved friend that Emma first sat in mournful thought of any continuance. The wedding over, and the bride-people gone, her father and herself were left to dine together, with no prospect of a third to cheer a long evening. Her father composed himself to sleep after dinner, as usual, and she had then only to sit and think of what she had lost.

6 The event had every promise of happiness for her friend. Mr. Weston was a man of unexceptionable character, easy fortune, suitable age, and pleasant manners; and there was some satisfaction in considering with what self-denying, generous friendship she had always wished and promoted the match; but it was a black morning's work for her. The want of Miss Taylor would be felt every hour of every day. She recalled her past kindness—the kindness, the affection of sixteen years—how she had taught and how she had played with her from five years old—how she had devoted all her powers to attach and amuse her in health—and how nursed her through the various illnesses of childhood. A large debt of gratitude was owing here; but the intercourse of the last seven years, the equal footing and perfect unreserve which had soon followed Isabella's marriage, on their being left to each other, was yet a dearer, tenderer recollection. She had been a friend and companion such as few possessed: intelligent, well-informed, useful, gentle, knowing all the ways of the family, interested in all its concerns, and peculiarly interested in herself, in every pleasure, every scheme of hers—one to whom she could speak every thought as it arose, and who had such an affection for her as could never find fault.

7 How was she to bear the change?—It was true that her friend was going only half a mile from them; but Emma was aware that great must be the difference between a Mrs. Weston, only half a mile from them, and a Miss Taylor in the house; and with all her advantages, natural and domestic, she was now in great danger of suffering from intellectual solitude. She dearly loved her father, but he was no companion for her. He could not meet her in conversation, rational or playful. . . .

8 Highbury, the large and populous village, almost amounting to a town, to which Hartfield, in spite of its separate lawn, and shrubberies, and name, did really belong, afforded her no equals. The Woodhouses were first in consequence there. All looked up to them. She had many acquaintances in the place, for her father was universally civil, but not one among them who could be accepted in lieu of Miss Taylor for even half a day. It was a melancholy change; and Emma could not but sigh over it, and wish for impossible things, till her father awoke, and made it necessary to be cheerful. His spirits required support. He was a nervous man, easily depressed; fond of everybody that he was used to, and hating to part with them; hating change of every kind. Matrimony, as the origin of change, was always disagreeable; and he was by no means yet reconciled to his own daughter's marrying, nor could ever speak of her but with compassion, though it had been entirely a match of affection, when he was now obliged to part with Miss Taylor too; and from his habits of gentle selfishness, and of being never able to suppose that other people could feel differently from himself, he was very much disposed to think Miss Taylor had done as sad a

thing for herself as for them, and would have been a great deal happier if she had spent all the rest of her life at Hartfield. Emma smiled and chatted as cheerfully as she could, to keep him from such thoughts; but when tea came, it was impossible for him not to say exactly as he had said at dinner,

9 "Poor Miss Taylor!—I wish she were here again. What a pity it is that Mr. Weston ever thought of her!"

1. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

Read this sentence from paragraph 3.

Even before Miss Taylor had ceased to hold the nominal office of governess, the mildness of her temper had hardly allowed her to impose any restraint; and the shadow of authority being now long passed away, they had been living together as friend and friend very mutually attached, and Emma doing just what she liked; highly esteeming Miss Taylor's judgement, but directed chiefly by her own.

How does this sentence explain how the relationship between Emma and Miss Taylor advances the plot in the passage?

- A. by summarizing how Miss Taylor became a governess for Emma
- B. by explaining the difference in social class between Emma and Miss Taylor
- C. by describing how Miss Taylor and Emma went from employer/ employee to friend
- D. by comparing how Emma treated Miss Taylor at the beginning of the story to how she treated her at the end of the story

Part B

Which quote advances the plot in the same way as the sentence from paragraph 3 in Part A?

- A. ". . . and her place had been supplied by an excellent woman as governess, who had fallen little short of a mother in affection." (para 2)
- B. "Between them it was more the intimacy of sisters." (para 3)
- C. "It was on the wedding-day of this beloved friend that Emma first sat in mournful thought of any continuance." (para 5)
- D. ". . . how she had taught and how she had played with her from five years old—how she had devoted all her powers to attach and amuse her in health—and how nursed her through the various illnesses of childhood." (para 6)

2. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

Read the following sentences from paragraph 8.

Highbury, the large and populous village, almost amounting to a town, to which Hartfield, in spite of its separate lawn, and shrubberies, and name, did really belong, afforded her no equals. The Woodhouses were first in consequence there.

What can be inferred about the Woodhouses based on the phrase first in consequence?

- A. The Woodhouses settled Highbury.
- B. The Woodhouses governed Highbury.
- C. The Woodhouses were the largest family in Highbury.
- D. The Woodhouses were the most important family in Highbury.

Part B

Which phrase from the sentences in Part A provides evidence to support the inference?

- A. ". . . the large and populous village . . ."
- B. ". . . almost amounting to a town . . ."
- C. ". . . in spite of its separate lawn . . ."
- D. ". . . afforded her no equals . . ."

3. Which statement expresses a theme of the passage?

- A. Change is often unavoidable.
- B. Strong friendships are important.
- C. True love endures despite separations.
- D. High social status rarely leads to happiness.

4. What does paragraph 8 suggest about English society in the early 1800s?

- A. A woman of wealth need not marry.
- B. Governesses have low social status.
- C. Farming is the foundation of the economy.
- D. Distinctions of class are openly acknowledged.

5. The author references the changing relationship between Emma and her father throughout the course of the passage. Select two quotes from the passage that show the changing relationship between Emma and her father.

	Changing Relationships
"She was the youngest of the two daughters of a most affectionate, indulgent father. . . ." (paragraph 2)	
"Sixteen years had Miss Taylor been in Mr. Woodhouse's family, less as a governess than a friend. . . ." (paragraph 3)	
"She dearly loved her father, but he was no companion for her. He could not meet her in conversation, rational or playful." (paragraph 7)	
"She had many acquaintance in the place, for her father was universally civil. . . ." (paragraph 8)	

6. How does the author create suspense in paragraph 4?

- A. by indicating Emma's high self-esteem
- B. by expressing Emma's enjoyment of her life
- C. by describing conflicts Emma has with others
- D. by offering information about evils surrounding Emma

7. How does the author use paragraphs 5 and 7 to build tension between Emma and her father?

- A. by describing the joy they find in one another's company
- B. by describing the closeness of their relationship after the marriage
- C. by describing the awkwardness between Emma and her father once Miss Taylor married
- D. by describing the anger both Emma and her father felt towards Miss Taylor upon her departure

8. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

Read the following sentence from paragraph 4.

The real evils, indeed, of Emma's situation were the power of having rather too much her own way, and a disposition to think a little too well of herself; these were the disadvantages which threatened alloy to her many enjoyments.

What can be inferred about Emma from this sentence?

- A. Emma is powerful and arrogant.
- B. Emma is carefree and confident.
- C. Emma is spoiled and self-absorbed.
- D. Emma is demanding and self-righteous.

Part B

Which statement from the passage supports the answer in Part A?

- A. ". . . they had been living together as friend and friend very mutually attached, and Emma doing just what she liked; highly esteeming Miss Taylor's judgment, but directed chiefly by her own." (paragraph 3)
- B. "She dearly loved her father, but he was no companion for her. He could not meet her in conversation, rational or playful." (paragraph 7)
- C. "She had many acquaintances in the place, for her father was universally civil, but not one among them who could be accepted in lieu of Miss Taylor for even half a day." (paragraph 8)
- D. "It was a melancholy change; and Emma could not but sigh over it, and wish for impossible things, till her father awoke, and made it necessary to be cheerful." (paragraph 8)

9. Read this line from paragraph 8 of the passage.

. . . when he was now obliged to part with Miss Taylor too; and from his habits of gentle selfishness, and of being never able to suppose that other people could feel differently from himself. .

. .

What does this line reveal about the narrator's feelings towards the father?

- A. The narrator views the father as caring.
- B. The narrator has sympathy for the father.
- C. The narrator views the father as arrogant.
- D. The narrator approves of the father's position.

10. Why does the author include the description of the setting in paragraph 8?

- A. to emphasize the loss Emma has experienced
- B. to reveal Emma's limited opportunities to meet people
- C. to highlight the importance of Emma's status in society
- D. to describe the elegance of the village in which Emma lives

11. How does the author's word choice develop tone in paragraph 8?

- A. by explaining the actions of Emma's father
- B. by describing how Emma's feelings have changed
- C. by recounting how Miss Taylor's life was different after she moved
- D. by showing how the action in the home changed after the marriage

Source: Mississippi Practice Test

Read the two passages and then answer the questions that follow.

Excerpt from **The Declaration of Independence**

by Thomas Jefferson

1 We hold these truths to be self-evident, that all men are created equal. . . . The history of the present King of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute Tyranny over these States. To prove this, let Facts be submitted to a candid world.

2 He has refused his Assent to Laws, the most wholesome and necessary for the public good.

3 He has forbidden his Governors to pass Laws of immediate and pressing importance, unless suspended in their operation till his Assent should be obtained; and when so suspended, he has utterly neglected to attend to them.

4 He has refused to pass other Laws for the accommodation of large districts of people, unless those people would relinquish the right of Representation in the Legislature, a right inestimable to them and formidable to tyrants only.

5 He has called together legislative bodies at places unusual, uncomfortable, and distant from the depository of their public Records, for the sole purpose of fatiguing them into compliance with his measures.

6 He has dissolved Representative Houses repeatedly, for opposing with manly firmness his invasions on the rights of the people. . . .

7 He has endeavoured to prevent the population of these States; for that purpose obstructing the Laws for Naturalization of Foreigners; refusing to pass others to encourage their migrations hither, and raising the conditions of new Appropriations of Lands.

8 He has obstructed the Administration of Justice, by refusing his Assent to Laws for establishing Judiciary powers.

9 He has made Judges dependent on his Will alone, for the tenure of their offices, and the amount and payment of their salaries.

10 He has erected a multitude of New Offices, and sent hither swarms of Officers to harrass our people, and eat out their substance.

11 He has kept among us, in times of peace, Standing Armies without the Consent of our legislatures.

12 He has affected to render the Military independent of and superior to the Civil power. . . .

Excerpt from **The Declaration of Sentiments**

by Elizabeth Cady Stanton

1 We hold these truths to be self-evident: that all men and women are created equal. . . .

2 The history of mankind is a history of repeated injuries and usurpations on the part of man toward woman, having in direct object the establishment of an absolute tyranny over her. To prove this, let facts be submitted to a candid world.

3 He has never permitted her to exercise her inalienable right to the elective franchise.

4 He has compelled her to submit to laws, in the formation of which she had no voice.

5 He has withheld from her rights which are given to the most ignorant and degraded men—both natives and foreigners.

6 Having deprived her of this first right of a citizen, the elective franchise, thereby leaving her without representation in the halls of legislation, he has oppressed her on all sides.

7 He has made her, if married, in the eye of the law, civilly dead.

8 He has taken from her all right in property, even to the wages she earns.

9 He has made her, morally, an irresponsible being, as she can commit many crimes with impunity, provided they be done in the presence of her husband. In the covenant of marriage, she is compelled to promise obedience to her husband, he becoming, to all intents and purposes, her

master—the law giving him power to deprive her of her liberty, and to administer chastisement.

10 He has so framed the laws of divorce, as to what shall be the proper causes, and in case of separation, to whom the guardianship of the children shall be given, as to be wholly regardless of the happiness of women—the law, in all cases, going upon a false supposition of the supremacy of man, and giving all power into his hands.

11 After depriving her of all rights as a married woman, if single, and the owner of property, he has taxed her to support a government which recognizes her only when her property can be made profitable to it.

12 He has monopolized nearly all the profitable employments, and from those she is permitted to follow, she receives but a scanty remuneration. He closes against her all the avenues to wealth and distinction which he considers most honorable to himself. As a teacher of theology, medicine, or law, she is not known.

13 He has denied her the facilities for obtaining a thorough education, all colleges being closed against her. . . .

.....

12. How does Jefferson develop his argument in the excerpt from *The Declaration of Independence*?

- A. by describing the duties of Britain's king
- B. by relaying stories of the developing nation
- C. by referring to different branches of government
- D. by listing the wrongs committed by Britain's king

13. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

Which sentence states the central idea of the excerpt from *The Declaration of Independence*?

- A. Great Britain's king encourages the migration of foreigners into the colonies.
- B. Great Britain's king frequently ignores the needs of people living in the colonies.
- C. Legislative bodies in the colonies no longer wish to be controlled by Great Britain's king.
- D. Some people residing in the colonies are oppressed by officers appointed by Great Britain's king.

Part B

Which statement supports the answer in Part A?

- A. "We hold these truths to be self-evident, that all men are created equal. . . ." (paragraph 1)
- B. "He has forbidden his Governors to pass Laws of immediate and pressing importance, unless suspended in their operation till his Assent should be obtained; . . ." (paragraph 3)
- C. "He has called together legislative bodies at places unusual, uncomfortable, and distant from the depository of their public Records. . . ." (paragraph 5)
- D. "He has endeavoured to prevent the population of these States; for that purpose obstructing the Laws for Naturalization. . . ." (paragraph 7)

14. Which of the following statements **most** accurately evaluates the evidence that Jefferson uses to support the claim that the King of Great Britain is a tyrant?

- A. The evidence is flawed because it does not follow the author's claim.
- B. The evidence is flawed because it does not provide the reader clear reasoning to support the claim.
- C. The evidence is accurate because it provides specific examples that support the claim.
- D. The evidence is accurate because it provides an unbiased vision of the King's actions to support the claim.

15. OMITTED (USED IN VOCABULARY SECTION)

16. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

How does the author use rhetoric to advance her point of view in the excerpt from *The Declaration of Sentiments*?

- A. The author uses a metaphor to compare women to servants.
- B. The author uses a hyperbole to exaggerate the plight of women.
- C. The author uses satire to ridicule the lives of women and the actions of men.
- D. The author uses understatement to minimize crimes committed by women while justifying the behavior of men.

Part B

Which sentence from the passage supports the answer in Part A?

- A. "He has withheld from her rights which are given to the most ignorant and degraded men—both natives and foreigners." (paragraph 5)
- B. "He has made her, if married, in the eye of the law, civilly dead." (paragraph 7)
- C. ". . . she is compelled to promise obedience to her husband, he becoming, to all intents and purposes, her master. . . ." (paragraph 9)
- D. ". . . if single, and the owner of property, he has taxed her to support a government which recognizes her only when her property can be made profitable to it." (paragraph 11)

17. How does Stanton support her claim that women have been oppressed throughout history?

- A. by describing the effects of laws and customs on women
- B. by contrasting the rights of married women and unmarried men
- C. by illustrating the lack of women in the legal system of the nation
- D. by arguing that women should keep the profits of their employment

18. By using a similar organizational structure as the excerpt from *The Declaration of Independence*, what does Stanton accomplish in the excerpt from *The Declaration of Sentiments*?

- A. Stanton provides solutions to the inequalities experienced by women due to male involvement in creating laws.
- B. Stanton proves that the King of Great Britain is a tyrant because he instituted the legal system in the United States.
- C. Stanton reaches a larger audience since she uses the same structure as the excerpt from *The Declaration of Independence*.
- D. Stanton refutes Jefferson's claim that "all men are created equal" by pointing out the inequalities experienced by women.

19. How do Jefferson and Stanton each develop the central idea in each of the passages?

- A. Jefferson includes a list of wrongs committed by the King and explanations of why independence is needed, while Stanton includes a list of wrongs committed by man and solutions for independence.
- B. Jefferson provides general, social examples of oppression inspiring independence, while Stanton provides specific, individual examples of the oppression inspiring women's desire for independence.
- C. Jefferson uses an authoritative tone expressing examples of the colonies' oppression, while Stanton uses a satirical tone expressing examples of the oppression women have experienced.
- D. Jefferson utilizes figurative language portraying examples of oppression from which independence is sought, while Stanton utilizes vivid imagery portraying examples of oppression from which independence is sought.

20. According to both the excerpt from *The Declaration of Independence* and the excerpt from *The Declaration of Sentiments*, what challenge did the United States and women face when the documents were written?

- A. ownership of property
- B. participation in elections
- C. monopolization of military
- D. representation in government

21. How are the ideas in the excerpt from *The Declaration of Sentiments* and the excerpt from *The Declaration of Independence* related?

- A. Jefferson supports Stanton's grievances in the excerpt from *The Declaration of Sentiments*.
- B. Stanton uses Jefferson's introduction to refute the ideas presented in the excerpt from *The Declaration of Independence*.
- C. Jefferson provides Stanton with a list of injustices that she includes in the excerpt from *The Declaration of Sentiments*.
- D. Stanton uses the ideas in the excerpt from *The Declaration of Independence* to justify her ideas on the injustices suffered by women.

Source: Mississippi Practice Test

Read the passage. Then answer the questions that follow.

Excerpt from **The Jungle**

by Upton Sinclair

Chapter 7

1 All summer long the family toiled, and in the fall they had money enough for Jurgis and Ona to be married according to home traditions of decency. In the latter part of November they hired a hall, and invited all their new acquaintances, who came and left them over a hundred dollars in debt.

2 It was a bitter and cruel experience, and it plunged them into an agony of despair. Such a time, of all times, for them to have it, when their hearts were made tender! Such a pitiful beginning it was for their married life; they loved each other so, and they could not have the briefest respite! It was a time when everything cried out to them that they ought to be happy; when wonder burned in their hearts, and leaped into flame at the slightest breath. They were shaken to the depths of them, with the awe of love realized—and was it so very weak of them that they cried out for a little peace? They had opened their hearts, like flowers to the springtime, and the merciless winter had fallen upon them. They wondered if ever any love that had blossomed in the world had been so crushed and trampled!

3 Over them, relentless and savage, there cracked the lash of want; the morning after the wedding it sought them as they slept, and drove them out before daybreak to work. Ona was scarcely able to stand with exhaustion; but if she were to lose her place they would be ruined, and she would surely lose it if she were not on time that day. They all had to go, even little Stanislovas, who was ill from overindulgence in sausages and sarsaparilla. All that day he stood at his lard machine, rocking unsteadily, his eyes closing in spite of him; and he all but lost his place even so, for the foreman booted him twice to waken him.

4 It was fully a week before they were all normal again, and meantime, with whining children and cross adults, the house was not a pleasant place to live in. Jurgis lost his temper very little, however, all things considered. It was because of Ona; the least glance at her was always enough to make him control himself. She was so sensitive—she was not fitted for such a life as this; and a hundred times a day, when he thought of her, he would clench his hands and fling himself again at the task before him. She was too good for him, he told himself, and he was afraid, because she was his. So long he

had hungered to possess her, but now that the time had come he knew that he had not earned the right; that she trusted him so was all her own simple goodness, and no virtue of his. But he was resolved that she should never find this out, and so was always on the watch to see that he did not betray any of his ugly self; he would take care even in little matters, such as his manners, and his habit of swearing when things went wrong. The tears came so easily into Ona's eyes, and she would look at him so appealingly—it kept Jurgis quite busy making resolutions, in addition to all the other things he had on his mind. It was true that more things were going on at this time in the mind of Jurgis than ever had in all his life before.

5 He had to protect her, to do battle for her against the horror he saw about them. He was all that she had to look to, and if he failed she would be lost; he would wrap his arms about her, and try to hide her from the world. He had learned the ways of things about him now. It was a war of each against all, and the devil take the hindmost. You did not give feasts to other people, you waited for them to give feasts to you. You went about with your soul full of suspicion and hatred; you understood that you were environed by hostile powers that were trying to get your money, and who used all the virtues to bait their traps with. The store-keepers plastered up their windows with all sorts of lies to entice you; the very fences by the wayside, the lampposts and telegraph poles, were pasted over with lies. The great corporation which employed you lied to you, and lied to the whole country—from top to bottom it was nothing but one gigantic lie.

22. OMITTED (USED IN VOCABULARY SECTION)

23. OMITTED (USED IN VOCABULARY SECTION)

24. OMITTED (USED IN VOCABULARY SECTION)

25. Which detail from the passage best supports the theme that personal relationships suffer from hardships?

A. "All summer long the family toiled, and in the fall they had money enough for Jurgis and Ona to be married according to home traditions of decency." (paragraph 1)

B. "They were shaken to the depths of them, with the awe of love realized—and was it so very weak of them that they cried out for a little peace?" (paragraph 2)

C. "It was fully a week before they were all normal again, and meantime, with whining children and cross adults, the house was not a pleasant place to live in." (paragraph 4)

D. "The store-keepers plastered up their windows with all sorts of lies to entice you; the very fences by the wayside, the lampposts and telegraph poles, were pasted over with lies." (paragraph 5)

26. Based on paragraph 4, what can the reader infer about Jurgis?

A Jurgis overcame his true nature because of his love for Ona.

B Jurgis wished Ona were a stronger person.

C Jurgis did not get upset easily.

D Jurgis worked hard at his job.

27. OMITTED (USED IN VOCABULARY SECTION)

28. What detail from the passage supports the idea that life for Jurgis and Ona might improve?

- A. "In the latter part of November they hired a hall, and invited all their new acquaintances. . . ." (paragraph 1)
- B. "It was a time when everything cried out to them that they ought to be happy; when wonder burned in their hearts, and leaped into flame at the slightest breath." (paragraph 2)
- C. "They had opened their hearts, like flowers to the springtime, and the merciless winter had fallen upon them." (paragraph 2)
- D. "He had to protect her, to do battle for her against the horror he saw about them." (paragraph 5)

29. Select two ways the author advances the plot through the development of Jurgis's character.

- A. Jurgis becomes fearful because of the financial struggles, which causes him to fear losing Ona as well.
- B. Jurgis becomes impatient due to his own insecurities, which causes him to push Ona further away from him.
- C. Jurgis becomes aware of the dangers within and around him, which causes him angrily to suspect all except Ona.
- D. Jurgis becomes aggressive because of the family members' attitudes, which causes him to work longer hours to stay away.
- E. Jurgis becomes critical of Ona because of her naïve personality, which causes him to question the nature of everything around them.

30. Which detail from the passage supports the idea that Ona is a much different person than Jurgis perceives?

- A. "They were shaken to the depths of them, with the awe of love realized—and was it so very weak of them that they cried out for a little peace?" (paragraph 2)
- B. "Ona was scarcely able to stand with exhaustion; but if she were to lose her place they would be ruined, and she would surely lose it if she were not on time that day." (paragraph 3)
- C. "She was so sensitive—she was not fitted for such a life as this; . . ." (paragraph 4)
- D. "The tears came so easily into Ona's eyes, and she would look at him so appealingly—it kept Jurgis quite busy making resolutions. . . ." (paragraph 4)

Source: Mississippi Practice Test

Read the two passages and then answer the questions that follow.

Excerpt from **Gift from the Sea**

by Anne Morrow Lindbergh

1 The shell in my hand is deserted. It once housed a whelk, a snail-like creature, and then temporarily, after the death of the first occupant, a little hermit crab, who has run away, leaving his tracks behind him like a delicate vine on the sand. He ran away, and left me his shell. It was once a protection to him. I turn the shell in my hand, gazing into the wide open door from which he made his exit. Had it become an encumbrance? Why did he run away? Did he hope to find a better home, a better mode of living? I too have run away, I realize, I have shed the shell of my life, for these few weeks of vacation.

2 But his shell—it is simple; it is bare, it is beautiful. Small, only the size of my thumb, its architecture is perfect, down to the finest detail. Its shape, swelling like a pear in the center, winds in a gentle spiral to the pointed apex. Its color, dull gold, is whitened by a wash of salt from the sea. Each whorl, each faint knob, each criss-cross vein in its egg-shell texture, is as clearly defined as on the day of creation. My eye follows with delight the outer circumference of that diminutive winding staircase up which this tenant used to travel.

3 My shell is not like this, I think. How untidy it has become! Blurred with moss, knobby with barnacles, its shape is hardly recognizable any more. Surely, it had a shape once. It has a shape still in my mind. What is the shape of my life?

4 The shape of my life today starts with a family. I have a husband, five children and a home just beyond the suburbs of New York. I have also a craft, writing, and therefore work I want to pursue. The shape of my life is, of course, determined by many other things; my background and childhood, my mind and its education, my conscience and its pressures, my heart and its desires. I want to give and take from my children and husband, to share with friends and community, to carry out my obligations to man and to the world, as a woman, as an artist, as a citizen.

5 But I want first of all—in fact, as an end to these other desires—to be at peace with myself. I want a singleness of eye, a purity of intention, a central core to my life that will enable me to carry out these obligations and activities as well as I can. I want, in fact—to borrow from the language of the saints—to live “in grace” as much of the time as possible. I am not using

this term in a strictly theological sense. By grace I mean an inner harmony, essentially spiritual, which can be translated into outward harmony. I am seeking perhaps what Socrates asked for in the prayer from the Phaedrus when he said, "May the outward and inward man be at one." I would like to achieve a state of inner spiritual grace from which I could function and give as I was meant to in the eye of God.

6 Vague as this definition may be, I believe most people are aware of periods in their lives when they seem to be "in grace" and other periods when they feel "out of grace," even though they may use different words to describe these states. In the first happy condition, one seems to carry all one's tasks before one lightly, as if borne along on a great tide; and in the opposite state one can hardly tie a shoe-string. It is true that a large part of life consists in learning a technique of tying the shoe-string, whether one is in grace or not. But there are techniques of living too; there are even techniques in the search for grace. And techniques can be cultivated. I have learned by some experience, by many examples, and by the writings of countless others before me, also occupied in the search, that certain environments, certain modes of life, certain rules of conduct are more conducive to inner and outer harmony than others. There are, in fact, certain roads that one may follow. Simplification of life is one of them.

7 I mean to lead a simple life, to choose a simple shell I can carry easily—like a hermit crab. But I do not.

Excerpt from **Walden**

by Henry David Thoreau

Chapter V: Solitude

1 I find it wholesome to be alone the greater part of the time. To be in company, even with the best, is soon wearisome and dissipating. I love to be alone. I never found the companion that was so companionable as solitude. We are for the most part more lonely when we go abroad among men than when we stay in our chambers. A man thinking or working is always alone, let him be where he will. Solitude is not measured by the miles of space that intervene between a man and his fellows. The really diligent student in one of the crowded hives of Cambridge College is as solitary as a dervish in the desert. The farmer can work alone in the field or the woods all day, hoeing or chopping, and not feel lonesome, because he is employed; but when he comes home at night he cannot sit down in a room alone, at the mercy of his thoughts, but must be where he can "see the folks," and recreate, and as he thinks remunerate himself for his day's

solitude; and hence he wonders how the student can sit alone in the house all night and most of the day without ennui and "the blues"; but he does not realize that the student, though in the house, is still at work in his field, and chopping in his woods, as the farmer in his, and in turn seeks the same recreation and society that the latter does, though it may be a more condensed form of it.

2 Society is commonly too cheap. We meet at very short intervals, not having had time to acquire any new value for each other. We meet at meals three times a day, and give each other a new taste of that old musty cheese that we are. We have had to agree on a certain set of rules, called etiquette and politeness, to make this frequent meeting tolerable and that we need not come to open war. We meet at the post-office, and at the sociable, and about the fireside every night; we live thick and are in each other's way, and stumble over one another, and I think that we thus lose some respect for one another. Certainly less frequency would suffice for all important and hearty communications. Consider the girls in a factory—never alone, hardly in their dreams. It would be better if there were but one inhabitant to a square mile, as where I live. The value of a man is not in his skin, that we should touch him. . . .

3 I have a great deal of company in my house; especially in the morning, when nobody calls. Let me suggest a few comparisons, that some one may convey an idea of my situation. I am no more lonely than the loon in the pond that laughs so loud, or than Walden Pond itself. What company has that lonely lake, I pray? And yet it has not the blue devils, but the blue angels in it, in the azure tint of its waters. The sun is alone, except in thick weather, when there sometimes appear to be two, but one is a mock sun. God is alone—but the devil, he is far from being alone; he sees a great deal of company; he is legion. I am no more lonely than a single mullein or dandelion in a pasture, or a bean leaf, or sorrel, or a horse-fly, or a bumblebee. I am no more lonely than the Mill Brook, or a weathercock, or the north star, or the south wind, or an April shower, or a January thaw, or the first spider in a new house. . . .

4 The indescribable innocence and beneficence of Nature—of sun and wind and rain, of summer and winter—such health, such cheer, they afford forever! and such sympathy have they ever with our race, that all Nature would be affected, and the sun's brightness fade, and the winds would sigh humanely, and the clouds rain tears, and the woods shed their leaves and put on mourning in midsummer, if any man should ever for a just cause grieve. Shall I not have intelligence with the earth? Am I not partly leaves and vegetable mould myself?

5 What is the pill which will keep us well, serene, contented? Not my or thy great-grandfather's, but our great-grandmother Nature's universal, vegetable, botanic medicines, by which she has kept herself young always, outlived so many old Parrs in her day, and fed her health with their decaying fatness. For my panacea, instead of one of those quack vials of a mixture dipped from Acheron and the Dead Sea, which come out of those long shallow black-schooner looking wagons which we sometimes see made to carry bottles, let me have a draught of undiluted morning air. Morning air! If men will not drink of this at the fountainhead of the day, why, then, we must even bottle up some and sell it in the shops, for the benefit of those who have lost their subscription ticket to morning time in this world. But remember, it will not keep quite till noonday even in the coolest cellar. . . .



31. OMITTED (USED IN VOCABULARY SECTION)

32. Which quote from the excerpt from *Gift from the Sea* supports the idea that the narrator wishes to live a simple life?

- A. "The shape of my life today starts with a family." (paragraph 4)
- B. "I want to give and take from my children and husband, to share with friends and community, to carry out my obligations. . . ." (paragraph 4)
- C. "But I want first of all—in fact, as an end to these other desires—to be at peace with myself." (paragraph 5)
- D. "It is true that a large part of life consists in learning a technique of tying the shoe-string, whether one is in grace or not." (paragraph 6)

33. The reader can infer that the author of the excerpt from *Gift from the Sea* claims her feelings about life are conflicted. Which two details from the passage **best** support this inference?

- A. "I too have run away, I realize, I have shed the shell of my life, for these few weeks of vacation." (paragraph 1)
- B. "My shell is not like this, I think. How untidy it has become!" (paragraph 3)
- C. "The shape of my life is, of course, determined by many other things; . . ." (paragraph 4)
- D. "I want a singleness of eye, a purity of intention, a central core to my life that will enable me to carry out these obligations. . . ." (paragraph 5)
- E. ". . . I believe most people are aware of periods in their lives when they seem to be 'in grace' and other periods when they feel 'out of grace'. . . ." (paragraph 6)

34. Which sentence from the excerpt from *Gift from the Sea* supports the idea that the narrator is searching for meaning?

- A. "I turn the shell in my hand, gazing into the wide open door from which he made his exit." (paragraph 1)
- B. "What is the shape of my life?" (paragraph 3)
- C. "And techniques can be cultivated." (paragraph 6)
- D. "There are, in fact, certain roads that one may follow." (paragraph 6)

35. How does paragraph 3 from the excerpt from *Gift from the Sea* help the author develop the passage in its entirety?

- A. by using a metaphor that foreshadows how she will detail her beliefs later in the passage
- B. by contrasting her real world with the natural world so she can create a fantasy world later in the passage
- C. by describing her environment to create a visual description of how she feels about her surroundings
- D. by providing a detailed description of her daily activities in order to explain how chaotic her life has become

36. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

What is a central idea of the excerpt from *Gift from the Sea*?

- A. Achieving balance is an easy pursuit.
- B. Responsibilities in life are hard to escape.
- C. Personal obligations can be managed with a little effort.
- D. Simplicity is difficult to achieve in the modern world.

Part B

Which detail from the passage helps develop the central idea identified in Part A?

- A. "I too have run away, I realize, I have shed the shell of my life, for these few weeks of vacation." (paragraph 1)
- B. "I want to give and take from my children and husband, to share with friends and community, to carry out my obligations to man and to the world. . . ." (paragraph 4)
- C. "I have learned . . . that certain environments, certain modes of life, certain rules of conduct are more conducive to inner and outer harmony than others." (paragraph 6)
- D. "I mean to lead a simple life, to choose a simple shell I can carry easily—like a hermit crab. But I do not." (paragraph 7)

37. OMITTED (USED IN VOCABULARY SECTION)

38. Read the sentence from paragraph 3 of the excerpt from *Walden*.

I have a great deal of company in my house; especially in the morning, when nobody calls.

How does the author use rhetoric to support his view on solitude in this sentence?

- A. He uses irony to emphasize his preference for solitude.
- B. He uses a metaphor to reinforce the solitude of his house.
- C. He uses hyperbole to embellish the loneliness of this solitude.
- D. He uses an allusion to emptiness to express his feelings of solitude.

39. You have read excerpts from *Gift from the Sea* and *Walden*. Select three sentences that provide sufficient and relevant evidence for the claim that solitude leads to inner-peace.

	Relevant Evidence
<p>"The shape of my life is, of course, determined by many things;..." (paragraph 4 of the excerpt from <i>Gift from the Sea</i>)</p>	
<p>"In the first happy condition, one seems to carry all one's tasks before one lightly, as if borne along on a great tide;..." (paragraph 6 of the excerpt from <i>Gift from the Sea</i>)</p>	
<p>"I mean to lead a simple life, to choose a simple shell I can carry easily—like a hermit crab." (paragraph 7 of the excerpt from <i>Gift from the Sea</i>)</p>	
<p>"I find it wholesome to be alone the greater part of the time" (paragraph 1 of the excerpt from <i>Walden</i>)</p>	
<p>"Certainly less frequently would suffice for all important and hearty communications." (paragraph 2 of the excerpt from <i>Walden</i>)</p>	
<p>"...we live thick and are in each other's way, and stumble over one another, and I think that we thus lose some respect for one another." (paragraph 2 of the excerpt from <i>Walden</i>)</p>	
<p>"And yet it has not the blue devils, but the blue angels in it, in the azure tint of its waters." (paragraph 3 of the excerpt from <i>Walden</i>)</p>	

40. Read these sentences from paragraph 5 of the excerpt from *Gift from the Sea*.

But I want first of all—in fact, as an end to these other desires—to be at peace with myself. I want a singleness of eye, a purity of intention, a central core to my life that will enable me to carry out these obligations and activities as well as I can.

Which of the following sentences from the excerpt from *Walden* is the **best** example of Thoreau using self-analysis, like the author in the sentences above, to express the same idea?

- A. "I never found the companion that was so companionable as solitude." (paragraph 1)
- B. "Solitude is not measured by the miles of space that intervene between a man and his fellows." (paragraph 1)
- C. "I have a great deal of company in my house; especially in the morning, when nobody calls." (paragraph 3)
- D. "The sun is alone, except in thick weather, when there sometimes appear to be two, but one is a mock sun." (paragraph 3)

41. Which statement best summarizes the way each author understands the value of simplicity?

- A. Lindbergh understands that simplicity is desirable but unattainable because of obligations to others; however, Thoreau understands that simplicity is necessary and feels obligated to no one.
- B. Lindbergh understands that simplicity is desirable and should be attained at any cost; however, Thoreau understands that simplicity is necessary and should be attained if society allows.
- C. Lindbergh understands that simplicity is important but grace is the most valuable attribute; on the other hand, Thoreau understands that simplicity is the most important attribute in life.
- D. Lindbergh understands that simplicity is important but the technique is impossible to cultivate; on the other hand, Thoreau understands that people are born complicated and should strive for simplicity in all aspects of life.

42. How does the author develop the idea of solitude in the excerpt from **Walden**?

- A. by using rhetorical devices
- B. by comparing personal anecdotes
- C. by providing examples and reasons
- D. by presenting arguments and counterarguments

43. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

What does the word remunerate mean as it used in paragraph 1 of the excerpt from Walden?

- A considers
- B rewards
- C celebrates
- D punishes

Part B

How does the author provide context for the word remunerate?

- A. using a description as an example
- B. providing the definition within the text
- C. explaining alternate meanings of the word
- D. comparing a farmer and a student as an illustration

Source: Mississippi Practice Test

Read the passage. Then answer the questions that follow.

Principles of Solar Box Cooker Design

by Mark Aalfs

A solar box cooker can be used to cook food or to purify water using light from the sun.

1 The following heating principles will be considered first:

- **Heat gain**
 - **Heat loss**
 - **Heat storage**
- A. Heat gain**

2 **Greenhouse effect:** This effect results in the heating of enclosed spaces into which the sun shines through a transparent material such as glass or plastic. Visible light easily passes through the glass and is absorbed and reflected by materials within the enclosed space.

3 The light energy that is absorbed by dark pots and the dark absorber plate underneath the pots is converted into longer wavelength heat energy and radiates from the interior materials. Most of this radiant energy, because it is of a longer wavelength, cannot pass back out through the glass and is therefore trapped within the enclosed space.

4 The reflected light is either absorbed by other materials within the space or, because it doesn't change wavelength, passes back out through the glass.

5 Critical to solar cooker performance, the heat that is collected by the dark metal absorber plate and pots is conducted through those materials to heat and cook the food.

6 **Glass orientation:** The more directly the glass faces the sun, the greater the solar heat gain. Although the glass is the same size on box 1 and box 2, more sun shines through the glass on box 2 because it faces the sun more directly. Note that box 2 also has more wall area through which to lose heat.

7 **Reflectors, additional gain:** Single or multiple reflectors bounce additional sunlight through the glass and into the solar box. This additional input of solar energy results in higher cooker temperatures.

B. Heat loss

8 The Second Law of Thermodynamics states that heat always travels from hot to cold. Heat within a solar box cooker is lost in three fundamental ways: **Conduction, Radiation, and Convection**

9 **Conduction:** The handle of a metal pan on a stove or fire becomes hot through the transfer of heat from the fire through the materials of the pan, to the materials of the handle. In the same way, heat within a solar box is lost when it travels through the molecules of tin foil, glass, cardboard, air, and insulation, to the air outside of the box.

10 The solar heated absorber plate conducts heat to the bottoms of the pots. To prevent loss of this heat via conduction through the bottom of the cooker, the absorber plate is raised from the bottom using small insulating spacers.

11 **Radiation:** Things that are warm or hot — fires, stoves, or pots and food within a solar box cooker — give off heat waves, or radiate heat to their surroundings. These heat waves are radiated from warm objects through air or space. Most of the radiant heat given off by the warm pots within a solar box is reflected from the foil and glass back to the pots and bottom tray. Although the transparent glazings do trap most of the radiant heat, some does escape directly through the glazing. Glass traps radiant heat better than most plastics.

12 **Convection:** Molecules of air move in and out of the box through cracks. They convect. Heated air molecules within a solar box escape, primarily through the cracks around the top lid, a side "oven door" opening, or construction imperfections. Cooler air from outside the box also enters through these openings.

C. Heat storage

13 As the density and weight of the materials within the insulated shell of a solar box cooker increase, the capacity of the box to hold heat increases. The interior of a box including heavy materials such as rocks, bricks, heavy pans, water, or heavy foods will take longer to heat up because of this additional heat storage capacity. The incoming energy is stored as heat in these heavy materials, slowing down the heating of the air in the box.

14 These dense materials, charged with heat, will radiate that heat within the box, keeping it warm for a longer period at the day's end.

44. Which statement best states a central idea of the passage?

- A. Energy absorbed by dark materials in the solar box becomes trapped within the enclosed spaces.
- B. Reflectors are vital to the solar box because they cause higher cooker temperatures.
- C. Heat gain, loss, and storage are important factors in an efficient solar box.
- D. Glass solar boxes tend to radiate heat more efficiently than plastic.

45. Which statement represents a benefit of using heavy materials in a solar box?

- A. Things that are warm give off heat waves to their surroundings.
- B. Heat is lost when it travels through the molecules inside the box.
- C. The interior of a box containing more dense objects takes longer to heat.
- D. Dense materials, charged with heat, keep the box warm for a longer period.

46. How does the author develop the central idea of the passage?

- A. by defining the greenhouse effect
- B. by listing and explaining each property of heat
- C. by providing statistics to support data on solar boxes
- D. by comparing and contrasting the size of solar boxes

47. Select the correct column for each description of how heat escapes from a solar box cooker.

	Conduction	Convection	Radiation
Heat waves from warm objects travel through air or space			
The absorber plate is used to prevent heat from escaping			
Air moves in and out of the box through openings			
Heat given off within the solar box reflects back to the bottom tray			
Molecules traveling through materials lose heat			

48. OMITTED

49. What is the author's purpose for including the information about different types of heat loss?

- A. to explain why air molecules should be confined to a solar box
- B. to illustrate the importance of air molecules in heating systems
- C. to describe ways to use insulation to prevent heat loss
- D. to suggest ways to make a more efficient solar box

50. How does the author demonstrate expertise in this passage?

- A. by defining uncommon scientific terms
- B. by using scientific and technical language
- C. by addressing all aspects of the heat principles
- D. by explaining specific ways to improve solar boxes

Source: Mississippi Item Sampler

Read the passage. Then answer the questions that follow.

Excerpt from **Mary Shelley's Frankenstein** **Chapter 12**

1 "I lay on my straw, but I could not sleep. I thought of the occurrences of the day. What chiefly struck me was the gentle manners of these people, and I longed to join them, but dared not. I remembered too well the treatment I had suffered the night before from the barbarous villagers, and resolved, whatever course of conduct I might hereafter think it right to pursue, that for the present I would remain quietly in my hovel, watching and endeavouring to discover the motives which influenced their actions.

2 "The cottagers arose the next morning before the sun. The young woman arranged the cottage and prepared the food, and the youth departed after the first meal.

3 "This day was passed in the same routine as that which preceded it. The young man was constantly employed out of doors, and the girl in various laborious occupations within. The old man, whom I soon perceived to be blind, employed his leisure hours on his instrument or in contemplation. Nothing could exceed the love and respect which the younger cottagers exhibited towards their venerable companion. They performed towards him every little office of affection and duty with gentleness, and he rewarded them by his benevolent smiles.

4 "They were not entirely happy. The young man and his companion often went apart and appeared to weep. I saw no cause for their unhappiness, but I was deeply affected by it. If such lovely creatures were miserable, it was less strange that I, an imperfect and solitary being, should be wretched. Yet why were these gentle beings unhappy? They possessed a delightful house (for such it was in my eyes) and every luxury; they had a fire to warm them when chill and delicious viands when hungry; they were dressed in excellent clothes; and, still more, they enjoyed one another's company and speech, interchanging each day looks of affection and kindness. What did their tears imply? Did they really express pain? I was at first unable to solve these questions, but perpetual attention and time explained to me many appearances which were at first enigmatic.

5 "A considerable period elapsed before I discovered one of the causes of the uneasiness of this amiable family: it was poverty, and they suffered

that evil in a very distressing degree. Their nourishment consisted entirely of the vegetables of their garden and the milk of one cow, which gave very little during the winter, when its masters could scarcely procure food to support it. They often, I believe, suffered the pangs of hunger very poignantly, especially the two younger cottagers, for several times they placed food before the old man when they reserved none for themselves.

6 "This trait of kindness moved me sensibly. I had been accustomed, during the night, to steal a part of their store for my own consumption, but when I found that in doing this I inflicted pain on the cottagers, I abstained and satisfied myself with berries, nuts, and roots which I gathered from a neighbouring wood.

7 "I discovered also another means through which I was enabled to assist their labours. I found that the youth spent a great part of each day in collecting wood for the family fire, and during the night I often took his tools, the use of which I quickly discovered, and brought home firing sufficient for the consumption of several days.

8 "I remember, the first time that I did this, the young woman, when she opened the door in the morning, appeared greatly astonished on seeing a great pile of wood on the outside. She uttered some words in a loud voice, and the youth joined her, who also expressed surprise. I observed, with pleasure, that he did not go to the forest that day, but spent it in repairing the cottage and cultivating the garden.

9 "By degrees I made a discovery of still greater moment. I found that these people possessed a method of communicating their experience and feelings to one another by articulate sounds. I perceived that the words they spoke sometimes produced pleasure or pain, smiles or sadness, in the minds and countenances of the hearers. This was indeed a godlike science, and I ardently desired to become acquainted with it. But I was baffled in every attempt I made for this purpose. Their pronunciation was quick, and the words they uttered, not having any apparent connection with visible objects, I was unable to discover any clue by which I could unravel the mystery of their reference. By great application, however, and after having remained during the space of several revolutions of the moon in my hovel, I discovered the names that were given to some of the most familiar objects of discourse; I learned and applied the words, 'fire,' 'milk,' 'bread,' and 'wood.' I learned also the names of the cottagers themselves. The youth and his companion had each of them several names, but the old man had only one, which was 'father.' The girl was called 'sister' or 'Agatha,' and the youth 'Felix,' 'brother,' or 'son.' I cannot describe the delight I felt when I learned the ideas appropriated to each of these sounds and was able to pronounce

them. I distinguished several other words without being able as yet to understand or apply them, such as 'good,' 'dearest,' 'unhappy.'

10 "I spent the winter in this manner. The gentle manners and beauty of the cottagers greatly endeared them to me; when they were unhappy, I felt depressed; when they rejoiced, I sympathized in their joys. I saw few human beings besides them, and if any other happened to enter the cottage, their harsh manners and rude gait only enhanced to me the superior accomplishments of my friends. The old man, I could perceive, often endeavoured to encourage his children, as sometimes I found that he called them, to cast off their melancholy. He would talk in a cheerful accent, with an expression of goodness that bestowed pleasure even upon me. Agatha listened with respect, her eyes sometimes filled with tears, which she endeavoured to wipe away unperceived; but I generally found that her countenance and tone were more cheerful after having listened to the exhortations of her father. It was not thus with Felix. He was always the saddest of the group, and even to my unpractised senses, he appeared to have suffered more deeply than his friends. But if his countenance was more sorrowful, his voice was more cheerful than that of his sister, especially when he addressed the old man.

11 "I could mention innumerable instances which, although slight, marked the dispositions of these amiable cottagers. In the midst of poverty and want, Felix carried with pleasure to his sister the first little white flower that peeped out from beneath the snowy ground. Early in the morning, before she had risen, he cleared away the snow that obstructed her path to the milk-house, drew water from the well, and brought the wood from the outhouse, where, to his perpetual astonishment, he found his store always replenished by an invisible hand. In the day, I believe, he worked sometimes for a neighbouring farmer, because he often went forth and did not return until dinner, yet brought no wood with him. At other times he worked in the garden, but as there was little to do in the frosty season, he read to the old man and Agatha."

1. Which two quotes best support the idea that the narrator lives outside normal society?

- A. "The young man and his companion often went apart and appeared to weep."
- B. "If such lovely creatures were miserable, it was less strange that I, an imperfect and solitary being, should be wretched."
- C. "I was at first unable to solve these questions, but perpetual attention and time explained to me many appearances which were at first enigmatic."
- D. "I cannot describe the delight I felt when I learned the ideas appropriated to each of these sounds and was able to pronounce them."
- E. "I could mention innumerable instances which, although slight, marked the dispositions of these amiable cottagers."

2. OMITTED (USED IN VOCABULARY SECTION)

3. Select an option in each table to complete the sentence about the narrator of the story.

In the passage, the narrator shows that he is

Very critical of others
Well-meaning
Dreamy and self-absorbed
Untrustworthy

when he says

"What chiefly struck me was the gentle manners of these people, and I longed to join them, but dared not."
"I remembered too well the treatment I had suffered the night before from the barbarous villagers"
"I discovered also another means through which I was enabled to assist their labours."
"He was always the saddest of the group, and even to my unpractised senses, he appeared to have suffered more deeply than his friends."

4. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

Which of the following is an important theme in the passage?

- A. hard work leads to success
- B. money buys happiness
- C. love endures despite family hardship
- D. life well lived is the best revenge

Part B

Which quote from the passage supports the answer in Part A?

- A. "The young man was constantly employed out of doors, and the girl in various laborious occupations within."
- B. "They possessed a delightful house (for such it was in my eyes) and every luxury; they had a fire to warm them when chill and delicious viands when hungry; they were dressed in excellent clothes . . ."
- C. "In the midst of poverty and want, Felix carried with pleasure to his sister the first little white flower that peeped out from beneath the snowy ground."
- D. "In the day, I believe, he worked sometimes for a neighbouring farmer, because he often went forth and did not return until dinner, yet brought no wood with him."

5. OMITTED (USED IN VOCABULARY SECTION)

6. Which quote from the passage shows how the father symbolizes the theme of the story?

- A. "I perceived that the words they spoke sometimes produced pleasure or pain, smiles or sadness, in the minds and countenance of the hearers."
- B. "He would talk in a cheerful accent, with an expression of goodness that bestowed pleasure even upon me."
- C. "He was always the saddest of the group, and even to my unpractised senses, he appeared to have suffered more deeply than his friends."
- D. "I could mention innumerable instances in which, although slight, marked the dispositions of these amiable cottagers."

7. Select three sentences that belong in an objective summary of this excerpt.

- A. The narrator stays hidden all winter and learns to like the family he is watching.
- B. The young woman, Agatha, is beautiful and kind.
- C. The cow does not supply enough milk for the three people living in the cottage.
- D. He steals food from the family until he realizes they are poor. He tries to help by secretly providing food and firewood.
- E. The narrator sees that the young man, Felix, works long hours and seems sad.
- F. The narrator listens to the family until he learns how to speak like them.

8. Select the two pieces of evidence from paragraph 5 that best show that the narrator feels pity for the family.

A considerable period elapsed before I discovered one of the causes of the uneasiness of the amiable family: it was poverty, and they suffered that evil in a very distressing degree. Their nourishment consisted entirely of the vegetables of their garden and the milk of one cow, which gave very little during the winter, when its masters could scarcely procure food to support it. They often, I believe, suffered the pangs of hunger very poignantly, especially the two younger cottagers, for several times they placed food before the old man while they reserved none for themselves.

- A. they suffered that evil in a very distressing degree.
- B. Their nourishment consisted entirely of the vegetables of their garden and the milk of one cow, which gave very little during the winter,
- C. They often, I believe, suffered the pangs of hunger very poignantly,
- D especially the two younger cottagers,

9. How does the author's use of the first-person narrator develop a central idea in the excerpt?

- A. The alien perspective of the narrator highlights the power of human relationships.
- B. The ignorance of the narrator emphasizes the plight of uneducated people.
- C. The extreme isolation of the narrator emphasizes the distance between human beings.
- D. The silence of the narrator highlights the superiority of actions over words.

10. Which two statements best describe the changes the narrator undergoes?

- A He loses his fear of people in general.
- B He learns to appreciate human bonds.
- C He loses his sense of being an outcast.
- D He gains greater awareness of his native land.
- E He learns to distinguish among the personalities of people.

11. In the first sentence of paragraph 9 below, the narrator refers to a great discovery he has made. Select the two pieces of evidence from the text that best show what that discovery is.

"By degrees I made a discovery of still greater moment. I found that these people possessed a method of communicating their experience and feelings to one another by articulate sounds. I perceived that the words they spoke sometimes produced pleasure or pain, smiles or sadness, in the minds and countenances of the hearers. This was indeed a godlike science, and I ardently desired to become acquainted with it. But I was baffled in every attempt I made for this purpose. Their pronunciation was quick, and the words they uttered, not having any apparent connection with visible objects, I was unable to discover any clue by which I could unravel the mystery of their reference. By great application, however, and after having remained during the space of several revolutions of the moon in my hovel, I discovered the names that were given to some of the most familiar objects of discourse; . . ."

- A. I found that these people possessed a method of communicating their experience and feelings to one another by articulate sounds.
- B. I perceived that the words they spoke sometimes produced pleasure or pain, smiles or sadness, in the minds and countenances of the hearers.
- C. This was indeed a godlike science, and I ardently desired to become acquainted with it.
- D. Their pronunciation was quick, and the words they uttered, not having any apparent connection with visible objects,
- E. I was unable to discover any clue by which I could unravel the mystery of their reference.
- F. I discovered the names that were given to some of the most familiar objects of discourse; . . ."

12. In the fourth paragraph of the text, the narrator lists various observations about the cottagers. The rest of the text indicates that some of these observations are accurate, and some of them are mistaken. Identify whether each observation is accurate or mistaken.

	Accurate	Mistaken
They were not entirely happy.		
They possessed every luxury.		
They had delicious viands when hungry		
They dressed in excellent clothes		
They enjoyed one another's company		

13. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

What effect is created by the first paragraph of the text?

- A tranquility
- B humor
- C terror
- D suspense

Part B

Which quote from the text best illustrates the effect identified in Part A?

- A "I lay on my straw."
- B "What chiefly struck me was the gentle manners of these people,"
- C "I remembered too well the treatment I had suffered the night before from the barbarous villagers."
- D "For the present, I would remain quietly in my hovel."

Source: Mississippi Item Sampler

Read the passage. Then answer the questions that follow.

Excerpt from **Endurance: Shackleton's Incredible Voyage**

by Alfred Lansing

British explorer Ernest Shackleton and his crew were forced to abandon the ship Endurance as its hull was slowly crushed between Antarctic ice floes, doomed to sink. Shackleton and his entire crew of twenty-seven spent over a year trapped on the Antarctic pack ice and lived to tell their story. The following excerpt describes the men's initial plight and the events leading up to the expedition.

1 Few men have borne the responsibility Shackleton did at that moment. Though he certainly was aware that their situation was desperate, he could not possibly have imagined then the physical and emotional demands that ultimately would be placed upon them, the rigors they would have to endure, the sufferings to which they would be subjected.

2 They were for all practical purposes alone in the frozen Antarctic seas. It had been very nearly a year since they had last been in contact with civilization. Nobody in the outside world knew they were in trouble, much less where they were. They had no radio transmitter with which to notify any would-be rescuers, and it is doubtful that any rescuers could have reached them even if they had been able to broadcast an SOS. It was 1915, and there were no helicopters . . . no suitable planes.

3 Thus their plight was naked and terrifying in its simplicity. If they were to get out—they had to get themselves out.

4 Shackleton estimated the shelf ice off the Palmer Peninsula—the nearest known land—to be 182 miles WSW of them. But the land itself was 210 miles away, was inhabited by neither human beings nor animals, and offered nothing in the way of relief or rescue.

5 The nearest known place where they might at least find food and shelter was tiny Paulet Island, less than a mile and a half in diameter, which lay 346 miles northwest across the heaving pack ice. There, in 1903, twelve years before, the crew of a Swedish ship had spent the winter after their vessel, the Antarctic, had been crushed by Weddell Sea ice. The ship which finally rescued that party deposited its stock of stores on Paulet Island for

the use of any later castaways. Ironically, it was Shackleton himself who had been commissioned at the time to purchase those stores—and now, a dozen years later, it was he who needed them.

6 Shackleton's order to abandon ship, while it signaled the beginning of the greatest of all Antarctic adventures, also sealed the fate of one of the most ambitious of all Antarctic expeditions. The goal of the Imperial Trans-Antarctic Expedition, as its name implies, was to cross the Antarctic continent overland from west to east.

7 Evidence of the scope of such an undertaking is the fact that after Shackleton's failure, the crossing of the continent remained untried for fully forty-three years—until 1957–1958. Then, as an independent enterprise conducted during the International Geophysical Year, Dr. Vivian E. Fuchs led the Commonwealth TransAntarctic Expedition on the trek. And even Fuchs, though his party was equipped with heated, tracked vehicles and powerful radios, and guided by reconnaissance planes and dog teams, was strongly urged to give up. It was only after a tortuous journey lasting nearly four months that Fuchs did in fact achieve what Shackleton set out to do in 1915.

8 This was Shackleton's third expedition to the Antarctic. He had gone first in 1901 as a member of the National Antarctic Expedition led by Robert F. Scott, the famed British explorer, which drove to 82 degrees 15' south latitude, 745 miles from the Pole—the deepest penetration of the continent at that time.

9 Then in 1907, Shackleton led the first expedition actually to declare the Pole as its goal. With three companions, Shackleton struggled to within 97 miles of their destination and then had to turn back because of a shortage of food. The return journey was a desperate race with death. But the party finally made it, and Shackleton returned to England a hero of the Empire. He was lionized wherever he went, knighted by his king, and decorated by every major country in the world.

10 He wrote a book, and he went on a lecture tour which took him all over the British Isles, the United States, Canada, and much of Europe. But even before it was over, his thoughts had returned to the Antarctic.

11 He had been within 97 miles of the Pole, and he knew better than anyone that it was only a matter of time until some expedition attained the goal that had been denied him. As early as March of 1911, he wrote to his wife, Emily, from Berlin where he was on tour: "I feel that another expedition unless it crosses the continent is not much."

14. Select the phrase from the paragraph that supports the claim that Shackleton and his men were victims of a situation outside their control.

Few men have borne the responsibility Shackleton did at that moment. Though he was certainly aware that their situation was desperate, he could not possibly have imagined then the physical and emotional demands that ultimately would be placed upon them, the rigors they would have to endure, the sufferings to which they would be subjected.

- A. Few men have borne the responsibility Shackleton did at that moment.
- B. Though he was certainly aware that their situation was desperate,
- C. he could not possibly have imagined then the physical and emotional demands that ultimately would be placed upon them,
- D. the rigors they would have to endure, the sufferings to which they would be subjected.

15. OMITTED (USED IN VOCABULARY SECTION)

16. Which quote from the passage best shows that Shackleton was an ambitious and competitive person?

- A. "The return journey was a desperate race with death."
- B. "But the party finally made it, and Shackleton returned to England a hero of the Empire."
- C. "He wrote . . . 'I feel that another expedition unless it crosses the continent is not much.' "
- D. "He was lionized wherever he went, knighted by his king, and decorated by every major country in the world."

17. The following question has two parts. First, answer Part A. Then, answer Part B.

Part A

Which of the following best states the author's purpose in the passage?

- A. to criticize Shackleton for putting the lives of others at risk
- B. to imagine how the voyage of the Endeavor could have succeeded with modern technology
- C. to explain Shackleton's achievement in the context of similar efforts
- D. to create a detailed psychological portrait of a great explorer

Part B

How does the author advance the purpose identified in Part A?

- A. by imagining Shackleton's thoughts
- B. by using dramatic emotional language
- C. by flashing backward and forward in time
- D. by celebrating the success of the 1957–58 expedition

18. What are two central ideas of this text? Select an option in each table to complete each sentence. Some people _____

Are drawn to difficult and dangerous goals.
Find joy and peace in nature.
Are ruined by their own success.

Challenges can _____

Cause ambitious people to become discouraged.
Be greater than they first appear.
Lead to personal growth and self-reflection

19. Which two statements best explain why Shackleton was treated like a hero upon his return from his 1907 voyage?

- A. He achieved the goal that he had set out to achieve.
- B. He had attempted something that had never been done before.
- C. He implemented new technologies during his quest.
- D. He and his team made an extremely dramatic return.
- E. He brought back new research that changed people's view of the Antarctic.

20. OMITTED (USED IN VOCABULARY SECTION)

21. Read the quotation and then choose the two statements that best answer the question.

"He had been within 97 miles of the Pole, and he knew better than anyone that it was only a matter of time until some expedition attained the goal that had been denied him."

What does this excerpt imply about Shackleton?

- A. He felt at peace with the failure of his previous mission.
- B. He felt competitive with other explorers who might try to reach the Pole.
- C. He felt a responsibility to the members of his crew to attempt the mission again.
- D. He felt uneasy about the response he had received upon his return.
- E. He felt a personal commitment to achieving his original goal.

22. What is the effect of the author's choice to insert a description of the successful 1957–58 expedition in the middle of the passage?

- A. It highlights the difficulty of Shackleton's journey by describing the challenge of reaching the destination even with the help of modern technology.
- B. It emphasizes the importance of international backing to achieving successful expeditions into new territory.
- C. It devalues Shackleton's effort by comparing it to a successful attempt that occurred years later.
- D. It clarifies the contribution of Shackleton's example to the eventual conquest of the Pole.

23. Select the piece of text from the paragraphs that best supports the idea that a lack of modern technology was a major cause of danger to Shackleton's team.

They were for all practical purposes alone in the frozen Antarctic seas. It had been very nearly a year since they had last been in contact with civilization. Nobody in the outside world knew they were in trouble, much less where they were. They had no radio transmitter with which to notify any would-be rescuers, and it is doubtful that any rescuers could have reached them even if they had been able to broadcast an SOS. It was 1915, and there were no helicopters . . . no suitable planes.

Thus their plight was naked and terrifying in its simplicity. If they were to get out—they had to get themselves out.

- A. been in contact with civilization.
- B. much less where they were.
- C. It was 1915, and there were no helicopters . . .
- D. If they were to get out —they had to get themselves out.

24. Read the statement, then select the answer.

"Ironically, it was Shackleton himself who had been commissioned at the time to purchase those stores—and now, a dozen years later, it was he who needed them."

This statement implies that Shackleton _____

- A. knew that he would one day be stranded in the Antarctic.
- B. had previous experience supplying similar expeditions.
- C. was once much wealthier than he was at the time of the mission.
- D. refused to acknowledge the danger of exploring the Antarctic.

Source: Mississippi Testlet

Read the passage. Then answer the questions that follow.

Excerpt from **Life on the Mississippi**

by Mark Twain

The following excerpt is from Mark Twain's 1883 book Life on the Mississippi. In this excerpt, Twain describes his experience as a river steamboat pilot on the Mississippi River.

1 The face of the water, in time, became a wonderful book--a book that was a dead language to the uneducated passenger, but which told its mind to me without reserve, delivering its most cherished secrets as clearly as if it uttered them with a voice. And it was not a book to be read once and thrown aside, for it had a new story to tell every day. Throughout the long twelve hundred miles there was never a page that was void of interest, never one that you could leave unread without loss, never one that you would want to skip, thinking you could find higher enjoyment in some other thing. There never was so wonderful a book written by man; never one whose interest was so absorbing, so unflagging, so sparkingly renewed with every re-perusal. The passenger who could not read it was charmed with a peculiar sort of faint dimple on its surface (on the rare occasions when he did not overlook it altogether); but to the pilot that was an ITALICIZED passage; indeed, it was more than that, it was a legend of the largest capitals, with a string of shouting exclamation points at the end of it; for it meant that a wreck or a rock was buried there that could tear the life out of the strongest vessel that ever floated. It is the faintest and simplest expression the water ever makes, and the most hideous to a pilot's eye. In truth, the passenger who could not read this book saw nothing but all manner of pretty pictures in it painted by the sun and shaded by the clouds, whereas to the trained eye these were not pictures at all, but the grimmest and most dead-earnest of reading-matter.

2 Now when I had mastered the language of this water and had come to know every trifling feature that bordered the great river as familiarly as I knew the letters of the alphabet, I had made a valuable acquisition. But I had lost something, too. I had lost something which could never be restored to me while I lived. All the grace, the beauty, the poetry, had gone out of the majestic river! I still kept in mind a certain wonderful sunset which I witnessed when steamboating was new to me. A broad expanse of the river was turned to blood; in the middle distance the red hue brightened into gold, through which a solitary log came floating, black and conspicuous; in one place a long, slanting mark lay sparkling upon the water; in another the

surface was broken by boiling, tumbling rings that were as many-tinted as an opal; where the ruddy flush was faintest was a smooth spot that was covered with graceful circles and radiating lines, ever so delicately traced; the shore on our left was densely wooded, and the somber shadow that fell from this forest was broken in one place by a long, ruffled trail that shone like silver; and high above the forest wall a clean-stemmed dead tree waved a single leafy bough that glowed like a flame in the unobstructed splendor that was flowing from the sun. There were graceful curves, reflected images, woody heights, soft distances, and over the whole scene, far and near, the dissolving lights drifted steadily, enriching it every passing moment with new marvels of coloring.

3 I stood like one bewitched. I drank it in, in a speechless rapture. The world was new to me and I had never seen anything like this at home. But as I have said, a day came when I began to cease from noting the glories and the charms which the moon and the sun and the twilight wrought upon the river's face; another day came when I ceased altogether to note them. Then, if that sunset scene had been repeated, I should have looked upon it without rapture and should have commented upon it inwardly after this fashion: "This sun means that we are going to have wind tomorrow; that floating log means that the river is rising, small thanks to it; that slanting mark on the water refers to a bluff reef which is going to kill somebody's steamboat one of these nights, if it keeps on stretching out like that; those tumbling 'boils' show a dissolving bar and a changing channel there; the lines and circles in the slick water over yonder are a warning that that troublesome place is shoaling up dangerously; that silver streak in the shadow of the forest is the 'break' from a new snag and he has located himself in the very best place he could have found to fish for steamboats; that tall dead tree, with a single living branch, is not going to last long, and then how is a body ever going to get through this blind place at night without the friendly old landmark?"

4 No, the romance and beauty were all gone from the river. All the value any feature of it had for me now was the amount of usefulness it could furnish toward compassing the safe piloting of a steamboat. Since those days, I have pitied doctors from my heart. What does the lovely flush in a beauty's cheek mean to a doctor but a "break" that ripples above some deadly disease? Are not all her visible charms sown thick with what are to him the signs and symbols of hidden decay? Does he ever see her beauty at all, or doesn't he simply view her professionally and comment upon her unwholesome condition all to himself? And doesn't he sometimes wonder whether he has gained most or lost most by learning his trade?

1. How did the author use the first paragraph to help develop his view of the river?

- A. by comparing the river to a book to show how interested he was in learning about the river
- B. by using descriptive language to describe the awe he felt when first traveling the river
- C. by contrasting the experiences of the passengers and crew to show how thrilling the river can be
- D. by explaining how he first became acquainted with the river as a steamboat pilot

2. This item has two parts. First answer Part A. Then answer Part B.

Part A

Read the following sentences from paragraph 3 and answer the question that follows.

I stood like one bewitched. I drank it in, in a speechless rapture. The world was new to me and I had never seen anything like this at home.

What is the meaning of the word rapture as it is used in the sentence above?

- A. moment of perception
- B. feeling of elation
- C. state of confusion
- D. sense of disappointment

Part B

Which of the following phrases from paragraph 3 supports the answer to Part A?

- A. "the glories and the charms"
- B. "wrought upon the river's face"
- C. "I ceased altogether to note them..."
- D. "should have commented upon it inwardly"

3. How does the author develop the central idea that the river is a living thing throughout the passage?

- A. by illustrating the beauty he sees in the river
- B. by detailing the dangers a steamboat captain must watch for
- C. by expressing sadness on how the river has lost its charm to him
- D. by describing how he must learn how the river changes as time passes

4. Read the following sentences from paragraph 4 and answer the question that follows.

Since those days, I have pitied doctors from my heart. What does the lovely flush in a beauty's cheek mean to a doctor but a "break" that ripples above some deadly disease?

Which of the following quotes about the steamboat pilot best supports the idea expressed in the lines from paragraph 4?

- A. "I still kept in mind a certain wonderful sunset which I witnessed when steamboating was new to me." (paragraph 2)
- B. "...that slanting mark on the water refers to a bluff reef which is going to kill somebody's steamboat one of these nights..." (paragraph 3)
- C. "A broad expanse of the river was turned to blood; in the middle distance the red hue brightened into gold, through which a solitary log came floating, black and conspicuous..." (paragraph 4)
- D. "...her visible charms sown thick with what are to him the signs and symbols of hidden decay..." (paragraph 4)

5. Over the course of the passage, the author's attitude about the river changes. How does the author develop this idea in the passage?

- A. Each paragraph in the passage explicitly shows a change in the perspective of the author towards the river.
- B. The passage is written chronologically to show his experience and what he felt during that time.
- C. Each paragraph is a description of different aspects of the river and how the author feels about each aspect.
- D. The passage is written to compare and contrast the river to something concrete in the life of the author.

6. Which of the following pieces of evidence from the passage supports the idea that the author became more educated about the river as time passed?

- A. "...all manner of pretty pictures in it painted by the sun..." (paragraph 1)
- B. "All the grace, the beauty, the poetry, had gone out of the majestic river!" (paragraph 2)
- C. "...for it meant that a wreck or a rock was buried there that could tear the life out of the strongest vessel that ever floated." (paragraph 3)
- D. "No, the romance and beauty were all gone from the river." (paragraph 4)

7. How does the author use language differently in paragraphs 2 and 3 to create different tones?

- A. In paragraph 2 the author uses technical language to help the reader understand the newness of his experiences on the river; in paragraph 3 he uses descriptive language to contrast his viewpoint with the reader's viewpoint.
- B. In paragraph 2 the author uses descriptive language to help the reader visualize the river; in paragraph 3 he uses technical language to note the change in his viewpoint of the river to the reader.
- C. In paragraph 2 the author uses figurative language to help the reader compare the river to colors; in paragraph 3 he uses connotative language to persuade readers to share his new viewpoint of the river with readers.
- D. In paragraph 2 the author uses figurative language to explain the size of the river to the readers; in paragraph 3 he uses technical language to explain his experiences on the river to the reader.

8. This item has two parts. First answer Part A. Then answer Part B.

Part A

Which of the following central ideas does the author develop throughout the passage?

- A. The author learned many new things about himself through his experiences on the river.
- B. The author endured boredom because of the time he wasted on the river.
- C. The author found that emotion is based more on mindset than events.
- D. The author discovered many new places and found these places important to his journey.

Part B

Which of the following sentences from the passage supports the correct answer to Part A?

- A. "I still kept in mind a certain wonderful sunset which I witnessed when steamboating was new to me." (paragraph 2)
- B. "But as I have said, a day came when I began to cease from noting the glories and the charms..." (paragraph 3)
- C. "Then, if that sunset scene had been repeated, I should have looked upon it without rapture..." (paragraph 3)
- D. "And doesn't he sometimes wonder whether he has gained most or lost most by learning his trade?" (paragraph 4)

Answer Key

1. C, B
2. D, D
3. D
4. D
5. A, C
6. B
7. C
8. C, A
9. C
10. B
11. D
12. D
13. B, B
14. C
15. C
16. A, C
17. A
18. D
19. B
20. D
21. D
22. A
23. D
24. C
25. B
26. A
27. C
28. D
29. A, C
30. B
31. A
32. C
33. B, D
34. B
35. A
36. D, D
37. B
38. A
39. A, D, G
40. A
41. A
42. C

43. B, D
44. C
45. RI.10.1 2 D
46. RI.10.3 2 B
47. RI.10.1 2 3,1,2,3,1
48. RI.10.7 3 B
49. RI.10.6 2 D
50. B
1. B, D
2. D
3. B, C
4. Part A:C Part B:C
5. A
6. B
7. A,D,F
8. A,C
9. A
10. B, E
11. A,B
12. 1A, 2B, 3B, 4B, 5A
13. Part A: D Part B: C
14. D
15. D
16. C
17. Part A: C Part B: D
18. A,B
19. B, D
20. B
21. B,E
22. A
23. C
24. B
1. B
2. B,A
3. D
4. B
5. A
6. C
7. B
8. C, A