

# Webster County Schools

95 CLARK AVENUE – EUPORA, MS 39744

Office of Curriculum

662-258-5551, Extension 15

[packets@webstercountyschools.org](mailto:packets@webstercountyschools.org)

# Algebra I

## Packet 2

# Webster County Schools

95 CLARK AVENUE – EUPORA, MS 39744

Office of Curriculum

662-258-5551, Extension 15

[packets@webstercountyschools.org](mailto:packets@webstercountyschools.org)

For Additional Online Resources, please see the Link to the following resources on the Curriculum page on [www.webstercountyschools.org](http://www.webstercountyschools.org):

## MDE Learning-at-Home Resources for Districts

The resources contained on this website contain materials and tools that may be used to provide additional resources to parents or students. This information is only intended to be a general summary of information provided to the public. The Mississippi Department of Education does not endorse or promote any commercial products or services. The views and opinion of authors expressed do not necessarily reflect those of the MDE, and they may not be used for advertising or product endorsement purposes. Please make sure that you choose the tool(s), resource(s) or material(s) that are developmentally appropriate and best fit the needs of your students, school, or district.

Resources have been divided into the following categories:

- Internet Services
- Multiple Content Area Resources
- Arts (Dance, Music, Theatre, Visual Arts) Resources
- Career Pathway Experiences (CPE) Alternative Resources
- English Language Arts Resources
- Mathematics Resources
- Science Resources
- Social Studies Resources
- World Language Resources
- Counselor Resources
- English Learner Resources
- Virtual Learning Resources

# Webster County Schools

95 CLARK AVENUE – EUPORA, MS 39744

Office of Curriculum

662-258-5551, Extension 15

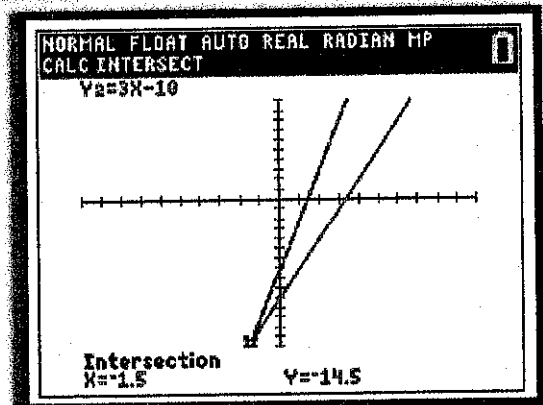
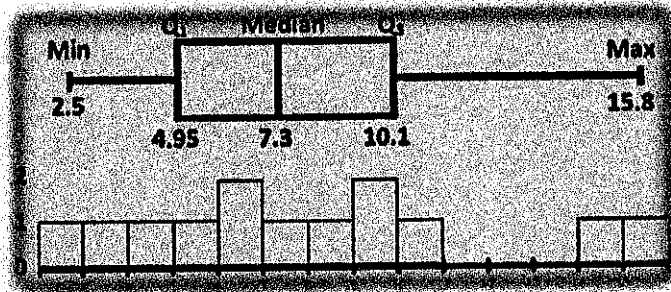
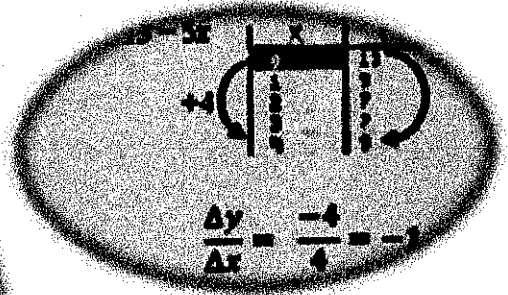
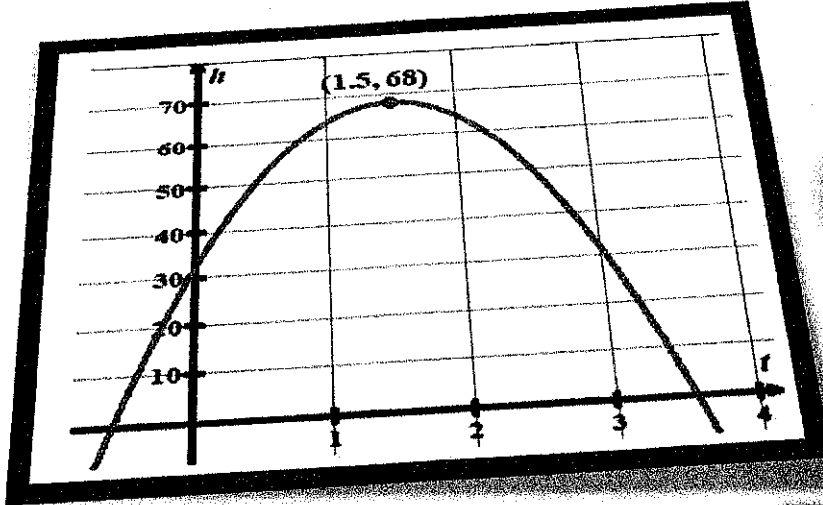
[packets@webstercountyschools.org](mailto:packets@webstercountyschools.org)

## At-Home Learning Packet Schedule:

- Packet 2- April 20, 2020
- Packet 3- May 4, 2020
- Packet 4- May 18, 2020

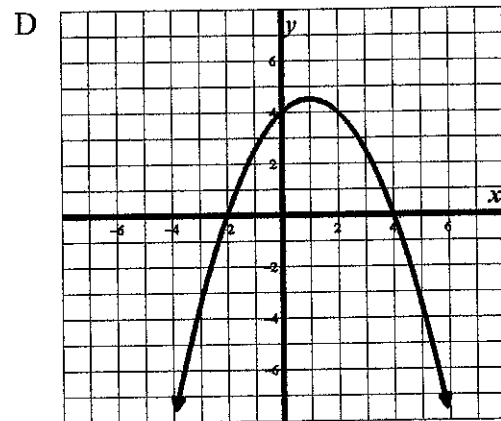
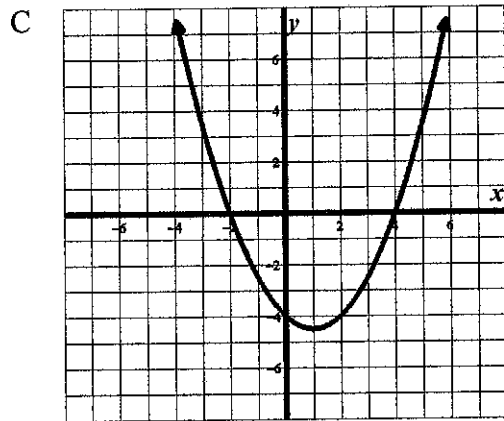
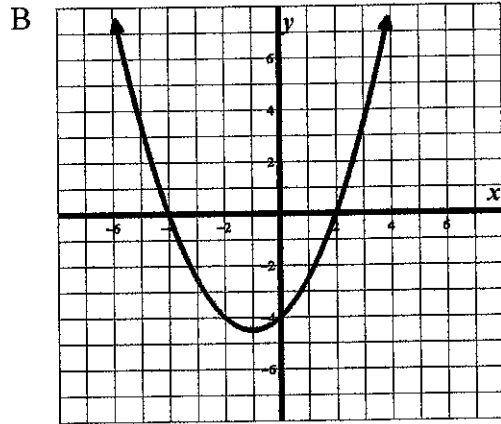
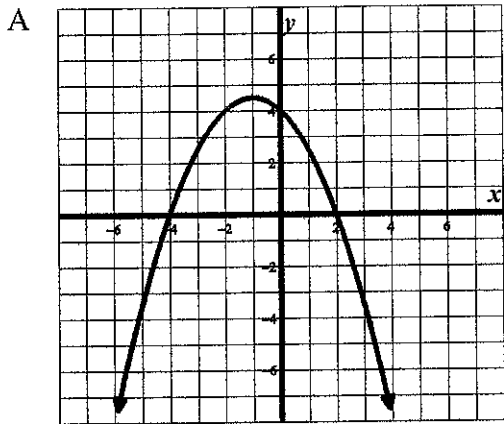
# Test Prep Central

## Algebra 1 End of Course Exam Preparation



14.  (A)  (B)  (C)  (D)
15.  (A)  (B)  (C)  (D)
16.  (A)  (B)  (C)  (D)
17. Part A:  April  June  
Part B:  April  June  
Part C: >
18.  (A)  (B)  (C)  (D)
19.  (A)  (B)  (C)  (D)
20.  (A)  (B)  (C)  (D)  (E)  (F)
21.  (A)  (B)  (C)  (D)
34.  (A)  (B)  (C)  (D)
35.  (A)  (B)  (C)  (D)  (E)
36.  (A)  (B)  (C)  (D)
37.  (A)  (B)  (C)  (D)
38.  (A)  (B)  (C)  (D)
39.  (A)  (B)  (C)  (D)  (E)
40.  (A)  (B)  (C)  (D)
41.  (A)  (B)  (C)  (D)

1. The function  $y = g(x)$  approaches positive infinity as  $x$  approaches positive infinity. The zeros of the function are  $-2$ , and  $4$ . Which graph could represent  $y = g(x)$ ?



2. The slope of a line passing through the points  $(3, -7)$  and  $(x, 10)$  is a function of  $x$ . Write a function rule for the slope of the line in terms of  $x$ .

A  $f(x) = \frac{10+7}{x-3}$

B  $f(x) = \frac{10-7}{x+3}$

C  $f(x) = \frac{x-3}{-7-10}$

D  $f(x) = \frac{3-x}{10+7}$

3. Which **two** values are zeros of the function?  $f(x) = (2x - 3)(x + 5)$ ?

A 1.5

B -1.5

C 5

D -5

E 0

4. Which function defines the sequence 5, -1, -7, -13, ..., for the  $n^{\text{th}}$  term in the sequence?

A  $f(n) = -6n + 5$

B  $f(n) = -6n + 11$

C  $f(n) = -6\left(\frac{1}{5}\right)^{n-1}$

D  $f(n) = 5\left(-\frac{1}{5}\right)^{n-1}$

---

5. The graph represents a function defined by a polynomial. What are the zeros of the function?

Select ALL that apply.

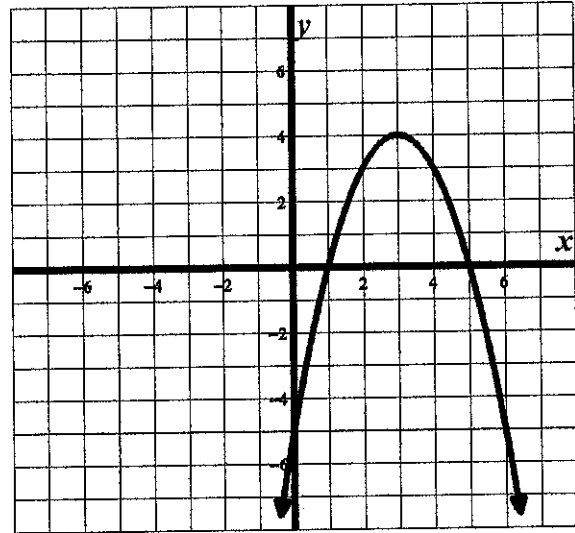
A -5

B 1

C 3

D -1

E 5



---

6. The cost to produce  $x$  widgets at the Widget Warehouse is given by the function  $C(x) = 25x + 120$ . Which of the following statements correctly represents the solution to  $C(x) = 1995$

A In the year 1995 the company produced 75 widgets

B The cost to produce 75 widgets is \$1995

C The cost to produce 1995 widgets is \$49995

D There were 1995 widgets in inventory when the cost per widget was \$75

---

7. The surface area of a sphere is given by  $A = 4\pi r^2$ .

Which function represents the radius of the sphere in terms of the area?

A  $r = \sqrt{\frac{4\pi}{A}}$

B  $r = \frac{A}{2\sqrt{\pi}}$

C  $r = \frac{-2\pi}{A}$

D  $r = \sqrt{\frac{A}{4\pi}}$

8. Which expressions are equivalent to  $(12x + 6) + (2x + 1)$ ?

Select **THREE**

A  $7(2x + 1)$

B  $(12x + 6)(2x + 1)$

C  $24x + 6$

D  $14x + 7$

E  $6(2x + 1)^2$

F  $6(2x + 1) + (2x + 1)$

G  $14(x + 2)$

9. The height of an object that has been dropped in terms of the number of seconds since it was dropped can be represented by  $h = \frac{1}{2}gt^2 + n$ . Which function correctly represents  $t$  in terms of  $h$ ,  $g$  and  $n$ ?

A  $t = \sqrt{2h - \frac{n}{g}}$

B  $t = \sqrt{\frac{2h-n}{g}}$

C  $t = \sqrt{\frac{2h-2n}{g}}$

D  $t = \sqrt{4h - g - n}$

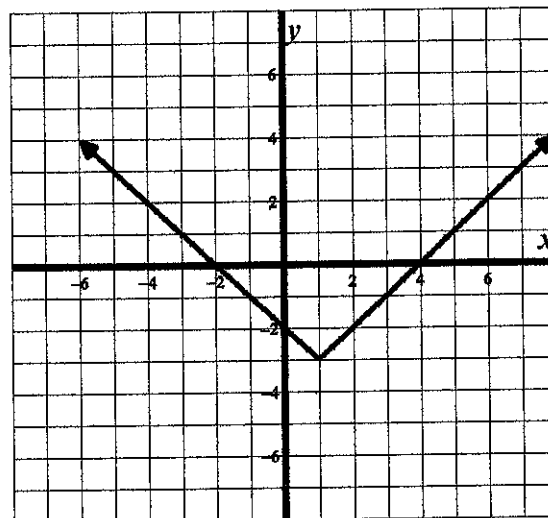
10. Which function is shown in the graph?

A  $y = |x + 1| + 3$

B  $y = |x - 1| + 3$

C  $y = |x + 1| - 3$

D  $y = |x - 1| - 3$



11. A landscaper is creating a rectangular flower bed such that the width is one third the length. The area of the flower bed is 78 square feet. Determine the width of the flower bed, to the *nearest tenth of a foot*.

A 5.1

B 6.2

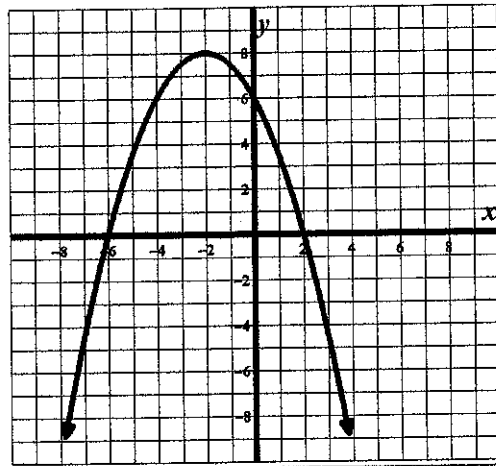
C 12.8

D 15.3

12. The curve sketched represents the function:  $y = \frac{1}{2}x^2 + 2x - 6$

Which **two** statements are true?

- A 2 is a zero
- B 6 is an  $x$ -intercept
- C 8 is a maximum value
- D -6 is a  $y$ -intercept
- E -2 is minimum value



13. Charles purchased apples and oranges at the grocery store. Apples are \$0.45 each and oranges are \$0.35 each. If he spent a total of \$12.30 for 20 pieces of fruit, then which system of equations can be used to find the number of apples,  $a$ , and the number of oranges,  $r$ , that he purchased?

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>A <math>0.35a + 0.45r = 20</math><br/><math>a + r = 12.3</math></li> <li>C <math>0.35a + 0.45r = 12.3</math><br/><math>a + r + 12.3 = 20</math></li> </ul> | <ul style="list-style-type: none"> <li>B <math>0.45a + 0.35r = 12.3</math><br/><math>a + r = 20</math></li> <li>D <math>0.45a + 0.35r = 20</math><br/><math>a + r = 12.3</math></li> </ul> |
|---|--|

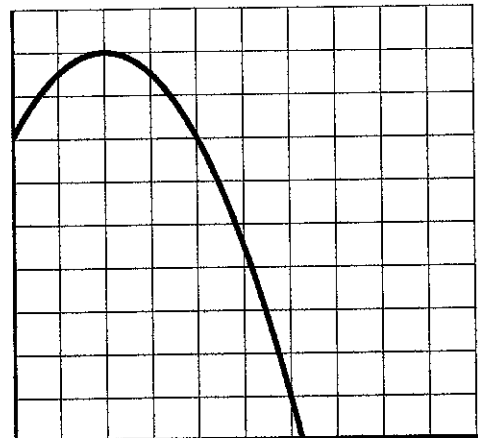
14. The expression  $2x^2 - 8x - 10$  can be factored into the form  $a(x + b)(x + c)$ , where  $a$ ,  $b$ , and  $c$  are integers, to reveal the zeros of the function defined by the expression. What are the zeros of the function defined by  $2x^2 - 8x - 10$ ?

Select **two**.

- |      |      |
|------|------|
| A -5 | B -1 |
| C 1  | D 2  |
| E 5  |      |

15. The equation  $y = -(x - 2)^2 + 18$  is graphed. What is the scale on the  $y$ -axis?

- |     |     |
|-----|-----|
| A 1 | B 2 |
| C 3 | D 4 |





16. Which two equations have no real solutions?

A  $x^2 + 6 = 0$

B  $x^2 - 6 = 0$

C  $x^2 + 2x - 6 = 0$

D  $x^2 - 6x + 16 = 0$

E  $x^2 + 2x + 1 = 0$

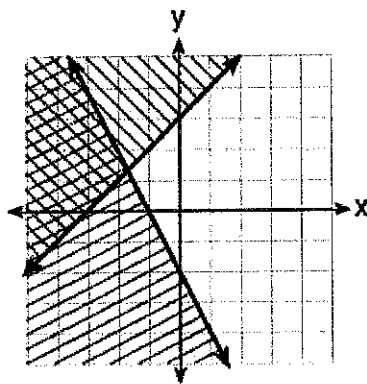
17. Which system of inequalities is graphed?

A  $y \leq x + 3$   
 $y \geq -2x - 2$

B  $y \geq x + 3$   
 $y \leq -2x - 2$

C  $y \leq x + 3$   
 $y \leq -2x - 2$

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



18. Solve the equation:  $(x + 5)^2 - 6 = 23$

A  $x = -5 \pm \sqrt{29}$

B  $x = -5 \pm \sqrt{17}$

C  $x = 5 \pm \sqrt{29}$

D  $x = 5 \pm \sqrt{17}$

19. The area of a rectangle is given by the function  $A = -2x^2 + 16x$ , where  $x$  is the width.

$$A = -2x^2 + 16x$$

$$A = -2(x + \square)^2 + ?$$

Complete the square to re-write the equation in vertex form.

What number should be used for  $\square$  ?

A  $-8$

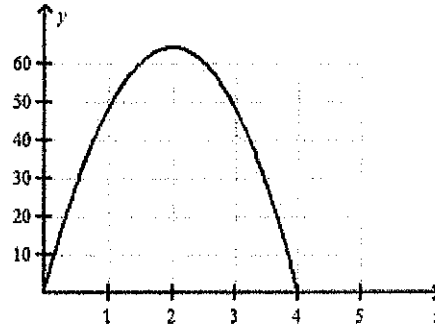
B  $8$

C  $-4$

D  $4$

20. During golf practice, Horace hit one of his best shots. The height of his shot is modeled by the graph, where  $y$  is the height of the golf ball (in feet)  $x$  seconds after it is hit. What is the average rate of change over the interval  $0 < x < 3$ ?

- A  $= 3 \frac{ft}{sec}$
- B  $= 50 \frac{ft}{sec}$
- C  $\approx 16.7 \frac{ft}{sec}$
- D  $= 0.06 \frac{ft}{sec}$



21. Which of the following can be solved to find the solutions to the equation?

$$x^2 + 6x + 2 = 0$$

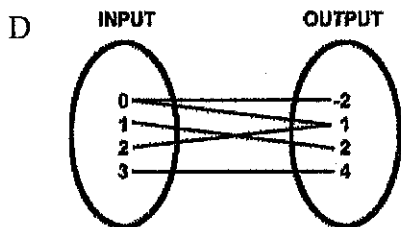
- A  $(x + 3)^2 = 11$
- B  $(x + 6)^2 = 7$
- C  $(x + 3)^2 = 7$
- D  $(x + 3)^2 = -11$

22. Which **three** represent a function?

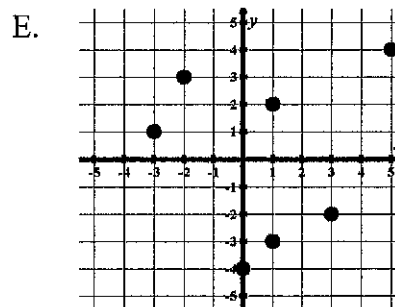
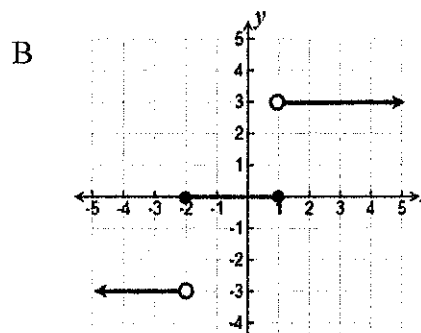
A  $y = |x - 1| + 3$

C

$x$	3	4	-2	3	5
$y$	8	7	6	-1	0

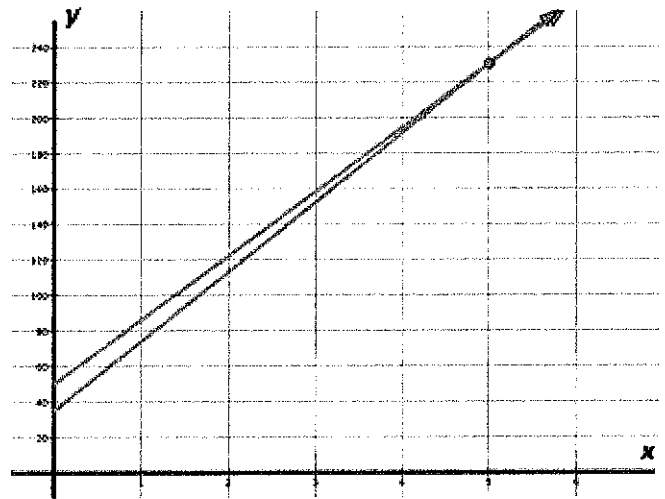


F.  $\{(0, 0), (1, 1), (2, 2), (3, 3)\}$



23. Two plumbers charge a flat fee and then an hourly rate for their services. The equations and graph show the total charges for each plumber in terms of the number of hours worked,  $x$ .

First plumber's total price:  $y = 50 + 36x$   
 Second plumber's total price:  $y = 35 + 39x$



Which **two** statements are true?

- A Both plumbers charge \$230 at 5 hours.
- B The second plumber charges \$35 per hour
- C The flat fee is \$86 for the first plumber
- D  $(50, 35)$  is the solution to the system.
- E The first plumber charges \$36 per hour

24. What value of  $x$  satisfies the system?

$$\begin{aligned} 5x + 3y &= 22 \\ -x + 2y &= 19 \end{aligned}$$

- A -3
- B -1
- C 4
- D 9

25. Finish solving the equation by completing the square

What number is used for  $\boxed{?}$

- A 12
- B 24
- C 36
- D 144

$$2x^2 + 24x - 6 = 0$$

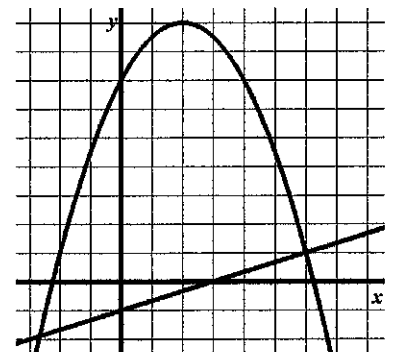
$$x^2 + 12x - 3 = 0$$

$$x^2 + 12x = 3$$

$$x^2 + 12x + \boxed{?} = 3 + \boxed{?}$$

26. The quadratic function  $f(x)$  and the linear function  $g(x)$  are shown in the graph. Which statement correctly explains why the point  $(6, 1)$  is one solution to the system?

- A Because  $f(6) = 1$  and  $g(6) = 1$
- B Because  $f(1) = 6$  and  $g(1) = 6$
- C Because the  $y$ -intercepts of the two graphs are 6 and 1.
- D Because the average rate of change of the graphs is the same from 1 to 6.

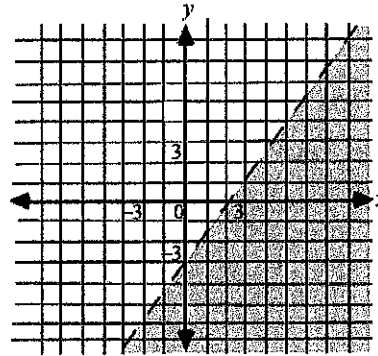


TEACHER PAY TEACHER

27. The total number of insects in a colony is given by the function  $T = a(b)^n$  where  $T$  is the total number of insects after  $n$  days. If both  $a$  and  $b$  are positive integers, then which statements is false?
- A If  $n = 0$ , then  $T = a$ .
  - B The number of insects is growing by a factor of  $b$  each day.
  - C As  $n$  increases the total number of insects increases at a constant rate.
  - D The total number of insects must always be greater than or equal to  $a$ .

28. Which inequality is graphed?

- A  $3x - 2y < 6$
- B  $2x - 3y < 6$
- C  $3x - 2y > 6$
- D  $2x - 3y > 6$



29. Which **two** statements are true?

- A The product of two irrational numbers is always an irrational number
- B The product of an irrational number and positive rational number is always irrational
- C The sum of two positive irrational numbers is never a whole number
- D The product of positive rational number and negative rational number is sometimes irrational.
- E The sum of an integer and an irrational number is never an irrational number

30. Consider the following population data for three local populations (A, B, and C) over time as given below. Which column represents **exponential growth**?

<i>Time</i> <i>years</i>	<b>A</b> <i>Population</i>	<b>B</b> <i>Population</i>	<b>C</b> <i>Population</i>
1	102	32	85
2	115	48	87
3	128	72	93
4	141	108	103
5	154	162	117
6	167	243	135

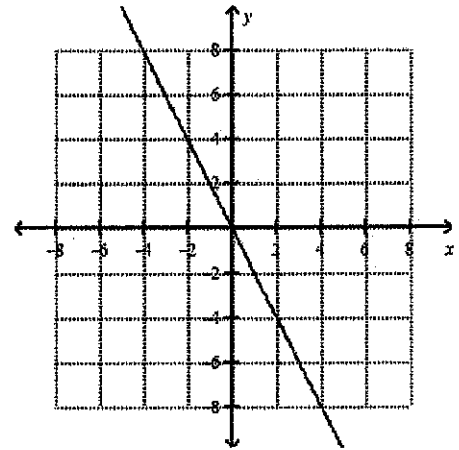
- D None of the populations represent exponential growth

31. A faucet drips at a rate of 1 drop every 10 seconds. It is estimated that 575 drops of water will fill a 100-milliliter bottle. Complete the expression to determine approximately how many bottles of water is wasted each day by the leaky water faucet.

$$\frac{1 \text{ bottle}}{575 \text{ drops}} \cdot \frac{1 \text{ drop}}{10 \text{ secs}} \cdot \frac{\quad}{1 \text{ day}}$$

- A 50 bottles
- B 15 bottles
- C 10 bottles
- D 1 bottle

32. If the given graph is shifted left 1 unit and down 5 units, then what is the value of  $b$  when the equation for the new graph is written in the form  $y = mx + b$ ?



- A -2
- B -4
- C -7
- D -9

33. The balance on a loan is decreasing as a rate of 12% annually. Which equation represents the current balance,  $B$ , in terms of the initial loan,  $A$ , and  $n$ , the number of years since the loan was taken out?

- |   |                 |   |                 |
|---|-----------------|---|-----------------|
| A | $B = A(0.12)^n$ | B | $A = B(1.12)^n$ |
| C | $B = A(0.88)^n$ | D | $B = A(1.12)^n$ |

34. How does the graph of  $f(x) = 2(x + 1)^2$  compare to the graph of  $g(x) = x^2$ ?

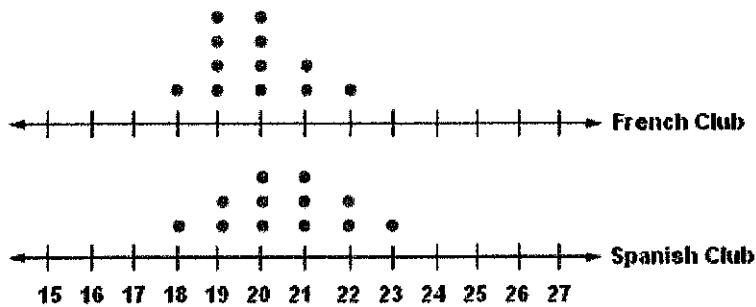
Select two.

- |   |   |   |  |
|---|---|---|--|
| A | The graph of $f(x)$ is wider than $g(x)$      | B | The graph of $f(x)$ is narrower than $g(x)$  |
| C | The graph of $f(x)$ is to the right of $g(x)$ | D | The graph of $f(x)$ is to the left of $g(x)$ |
| E | The graph of $f(x)$ is above $g(x)$           |   |  |





42. Every Friday, the French Club sells bagels and the Spanish Club sells doughnuts to raise money for charity. The double dot plot shows how many items the clubs sell over several weeks. Which statement is *not* true?



- A. The distribution is symmetric for the Spanish Club, but not for the French Club.
- B. The French Club has a greater mean than the Spanish Club.
- C. The mean and median are the same for the Spanish Club.
- D. The Spanish Club has a greater median than the French Club.

43. Marion is an excellent athlete. She can run 2 miles in 7 minutes.

How fast can she run in feet per second?

- A  $35.2 \frac{ft}{sec}$
- B  $22.3 \frac{ft}{sec}$
- C  $19.8 \frac{ft}{sec}$
- D  $25.1 \frac{ft}{sec}$

44. A restaurant has 19 tables that can seat a total of 84 people.

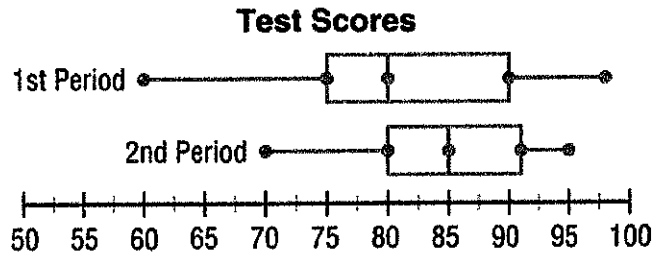
Some of the tables seat 4 people and the others seat 5 people.

How many tables seat 5 people?

- A 5
- B 7
- C 8
- D 11



45. Consider the test scores of two classes represented in the box plots shown



Which statement must be **false**?

- A The median for 1<sup>st</sup> Period is equal to Q1 for second period
  - B The IQR for 1<sup>st</sup> period is less than the IQR for second period
  - C The range of scores for 1<sup>st</sup> period is greater than second period
  - D The mean for 1<sup>st</sup> period is less than the mean for second period
- 

46. Which **two** are solutions to the equation?  $x^2 - 12 = 38$

- A  $x = \sqrt{26}$
- B  $x = -5\sqrt{2}$
- C  $x = 25$
- D  $x = 5\sqrt{2}$
- E  $x = -25$