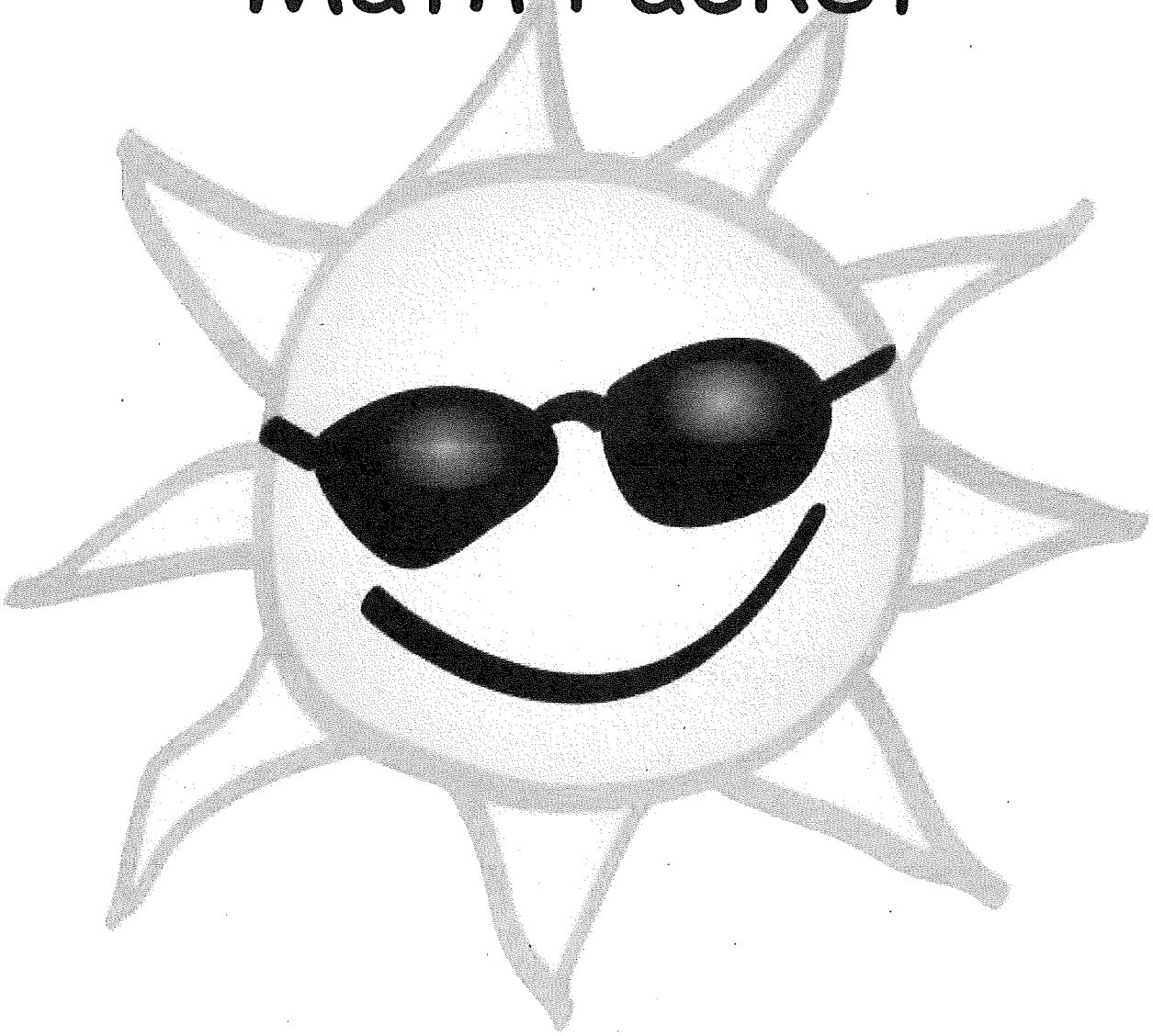
Summer

Math Packet



For students entering:

Math 7

Name: _____

Operation with Decimals: Simplify. Re-write each problem and show your work. Do NOT use a calculator!

1.) $5.038+2.96$

2.) $16+1.6+0.517$

3.) $27-10.4$

4.) $9.006-4.44$

5.) $4.8 \cdot 6.9$

6.) $0.05 \cdot 0.7$

7.) $17.03 \div 9$

8.) $4.82 \div 45$

9.) $3.25 \div 0.5$

10.) $23.24 \div 2.8$

Operations with Fractions: Simplify. Write your answer in lowest terms. Do NOT use a calculator!

1.) $\frac{3}{8}+\frac{1}{4}$

2.) $6\frac{1}{2}+3\frac{1}{9}$

3.) $5\frac{1}{3}-2\frac{1}{4}$

4.) $6+3\frac{3}{8}$

5.) $2\frac{1}{6}+2\frac{7}{8}$

6.) $7\frac{1}{8}-2\frac{3}{4}$

7.) $20-8\frac{3}{4}$

8.) $\frac{5}{9}\div\frac{1}{3}$

9.) $\frac{11}{12}\cdot 3$

10.) $\frac{5}{16}\cdot\frac{4}{5}$

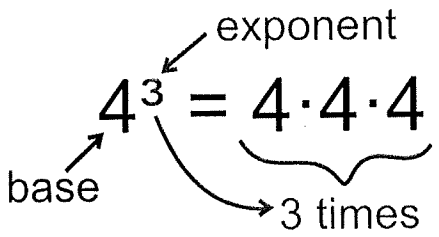
11.) $5\frac{1}{2}\cdot 4\frac{3}{4}$

12.) $3\cdot 5\frac{2}{3}$

13.) $5\div\frac{2}{5}$

14.) $9\frac{1}{4}\div 2\frac{1}{4}$

Exponents: Follow the directions for each section.



Write each exponent in *expanded form*.

Example: $5^3 = 5 \cdot 5 \cdot 5$

1.) $4^8 =$

2.) $3^5 =$

3.) $6^6 =$

***challenge** 4.) $x^4 =$

Write each in *exponential form*.

Example: $3 \cdot 3 \cdot 3 \cdot 3 = 3^4$

5.) $7 \cdot 7 \cdot 7 =$

6.) $3 \cdot 3 \cdot 8 \cdot 8 \cdot 8 \cdot 8 =$

***challenge** 7.) $x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y =$

8.) $9 \cdot 9 \cdot 9 \cdot 9 =$

Evaluate. Show your work.

Example: $2^3 = 2 \cdot 2 \cdot 2 = 8$

9.) $5^3 =$

10.) $3^4 =$

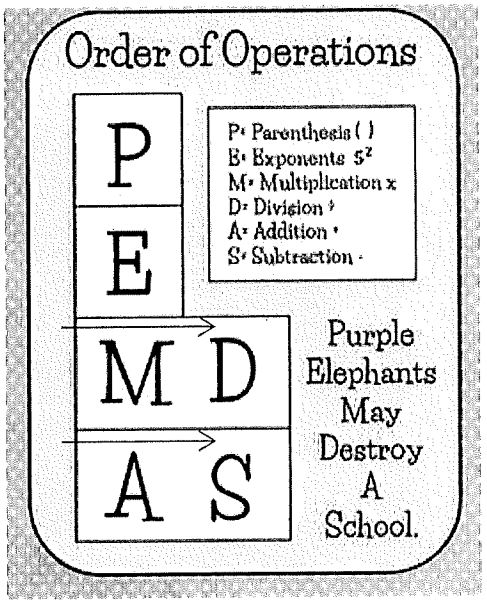
11.) $6^3 =$

12.) $9^2 =$

13.) $13^2 =$

***challenge** 14.) $4^2 \cdot 3^3 =$

Order of Operations: Simplify. Show your work and box your answer.



Example:

$$13^2 - 2 \cdot 5 + (12 \div 2^2)$$
$$169 - 2 \cdot 5 + (12 \div 4)$$
$$169 - 2 \cdot 5 + \quad 3$$
$$169 - \ 10 \ + \quad 3$$
$$159 \quad + \quad 3$$
$$\boxed{162}$$

1.) $[36 \div (3 \cdot 4)] + 2$

2.) $60 - 7(5 + 6 \div 2) + 2^4$

3.) $4 + 6(5 - 2)$

4.) $2 + 8 \cdot 3^2$

5.) $24 - 6 \cdot 2$

6.) $4 \cdot 9 + 7 \cdot 8$

7.) $102 - 2^4(3^4 - 51)$

8.) $14 + 8 \div 2 - 1$

9.) $\dfrac{63-8}{3+8} - 2$

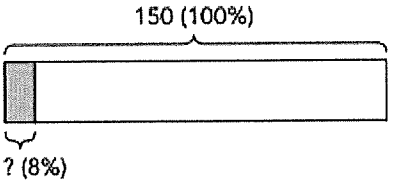
10.) $5 \cdot \dfrac{19-7}{5+1}$

Percent of a Quantity: Solve each problem. Show your work!

Example

What is 8% of 150?

Method 1



The model shows that:

100% → 150

1% → $\frac{150}{100} = 1.5$

8% → $8 \times 1.5 = 12$

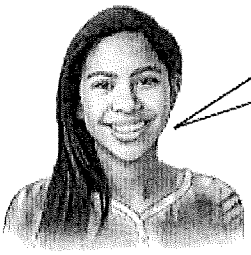
8% of 150 is 12.

Method 2

8% of 150 = $\frac{8}{100} \times 150$

$= 12$

8% of 150 is 12.



"of" means "×". In this case, 8% of 150 is the same as 8% × 150.

1.) 35% of 900

Method 1

2.) 115% of $360

Method 1

3.) 82% of 450

Method 2

4.) 170% of 2,100 ft

Method 2

Choose the method you like best to complete the following problems.

5.) 35% of 125 miles

6.) 46% of 340 gallons

7.) 65% of 180 pounds

8.) 75% of 72 hours

9.) 120% of $590

10.) 245% of 860 kilograms

Percent of a Quantity - Continued: Solve each problem. Show your work!

Example

15% of a number is 180. Find the number.

$15\% \rightarrow 180$

$1\% \rightarrow \frac{180}{15}$

$100\% \rightarrow 100 \times \frac{180}{15} = 1{,}200$

The number is 1,200.

1.) 40% of a number is 180.

Find the number.

$40\% \rightarrow 180$

$1\% \rightarrow$ _____

$100\% \rightarrow$ _____

The number is _____.

2.) 75% of a number is 230.

Find the number.

$75\% \rightarrow 230$

$1\% \rightarrow$ _____

$100\% \rightarrow$ _____

The number is _____.

3.) 25% of _____ is 195.

4.) 56% of _____ is 70.

5.) 18% of _____ is 99.

6.) 92% of _____ is 345.

7.) 55% of _____ is 143.

8.) 350% of _____ is 679.

9.) 47% of _____ is 141.

10.) 125% of _____ is 85.

Writing Algebraic Expressions:

Use the key words to write an algebraic expression. Simplify if possible.

1.) One-eighth of m.

_____

2.) The product of x and 7.

_____

3.) Subtract 2 from x.

_____

4.) The sum of m and n.

_____

5.) Subtract the product of 5 and x from 7.

_____

6.) Divide y by the sum of 9 and x.

_____

7.) Subtract the cube of y from 15.

_____

8.) 4 times the sum of 10 and x.

_____

9.) 13 less than 5 divided by p.

_____

10.) 5 more than the product of 3 and c.

_____

11.) 12 less than 3 times a number y.

_____

12.) 6 less than the sum of 5 and y.

_____

13.) one-third of the product of 5p and 3.

_____

14.) the product of 5x and 7 divided by 13.

_____

Words and Phrases to Math Symbols

Addition

Plus
And
Total of
Altogether Increased By
Combined Add Sum
Together More Than
Added To
In All
Make

Subtraction

Subtract Gave Take Away
Decrease By Fewer Minus
Shared Fewer Than Less Than
Difference Less

Multiplication

Times Triple
Double Product
Multiplied By
OF
Increased By a Factor
Twice Multiple

Division

Quotient of Per Ratio of
Divided By Half Divisor
Divided Into Percent Split Up

Equals

Is Are Were Was

Will Be Yields Sold For

Parenthesis Words

The Quantity of
Twice the sum of
Times the sum of
Times the difference of
Plus the difference of

Simplifying Algebraic Expressions: Simplify each expression by combining like terms. Box the algebraic terms and circle the numeric terms in each expression.

Example: $8 + 3j - 5 - 2j + 8j$

$8 - 5 + 3j - 2j + 8j$ Regroup like terms

$3 + j + 8j$ Add numeric terms; combine algebraic terms

$3 + 9j$

1.) $12c - 3c - 3c$

2.) $5j + 2j + 9j$

3.) $9k + 3k - 2k$

4.) $8y - 5y + 2y$

5.) $5t + 4 + 2t$

6.) $6m - 10 - 2m - m$

7.) $7r + 5r - 12$

8.) $20 + 5u + 10u - 20 - 14u$

9.) $20 + 12k - 7k - 8$

10.) $6x + 15 + 9x - 10x - 8$

Expanding Algebraic Expressions: Expand each expression. Show your work!

Example: $4(5a+7)$

$= 4 \bullet 5a + 4 \bullet 7$ *Multiply each term inside the parentheses by 4.*

$= 20a + 28$

1.) $3(p+9)$	2.) $7(4x+2)$
3.) $10(3-2x)$	4.) $9(2x-9)$
5.) $6(3-4d)$	6.) $2(12+5y)$
7.) $4(3g+5)$	8.) $8(11-6a)$
9.) $7(4x+5y)$	10.) $3(8m-3n)$
11.) $3(2a+6b+3c)$	12.) $5(7x+8y-3z)$

Factoring Algebraic Expressions: Factor each expression by taking out the GCF. Show your work!

Example: $56x-7$

$=7\cdot 8x-7\cdot 1$ *The GCF of 56 and 7 is 7.*

$=7(8x-1)$

1.) $3-24t$	2.) $6a+24$
3.) $5y+20$	4.) $6+42h$
5.) $3b-21$	6.) $3x+15y$
7.) $15w-5$	8.) $4n-28$
9.) $8+8a$	10.) $16g-24h$
11.) $5a+20b+35c$	12.) $15x-12y+36z$

One-Step Equations: Solve. Show your work! Box your answer.

1.) $x-8=15$

2.) $x+15=6$

3.) $5x=6$

4.) $\frac{x}{8}=6$

5.) $x-8=12$

6.) $6+x=15$

7.) $1.3x=2.6$

8.) $\frac{x}{9}=12$

9.) $\frac{2}{3}x=18$

10.) $\frac{5}{6}x=10$

Name : _____ Score : _____

Identifying Ordered Pairs

A) Write the point that is located at each ordered pair.

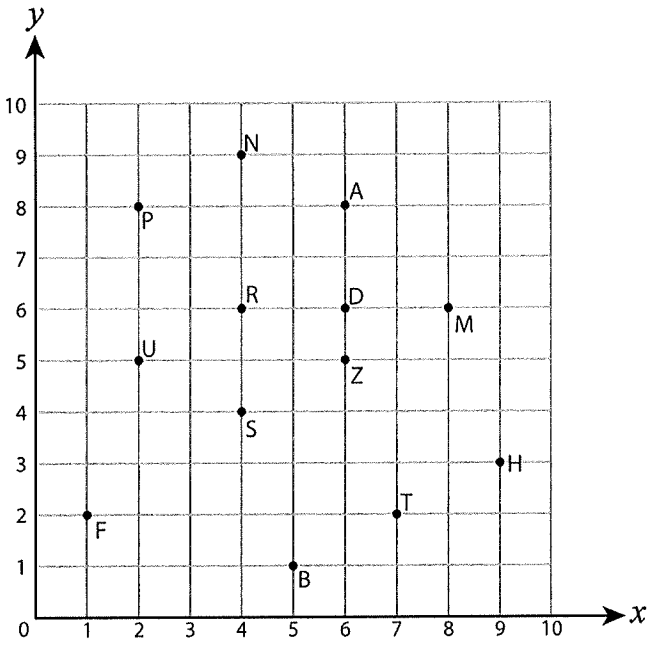
1) (2, 5) _____ 2) (4, 6) _____

3) (9, 3) _____ 4) (7, 2) _____

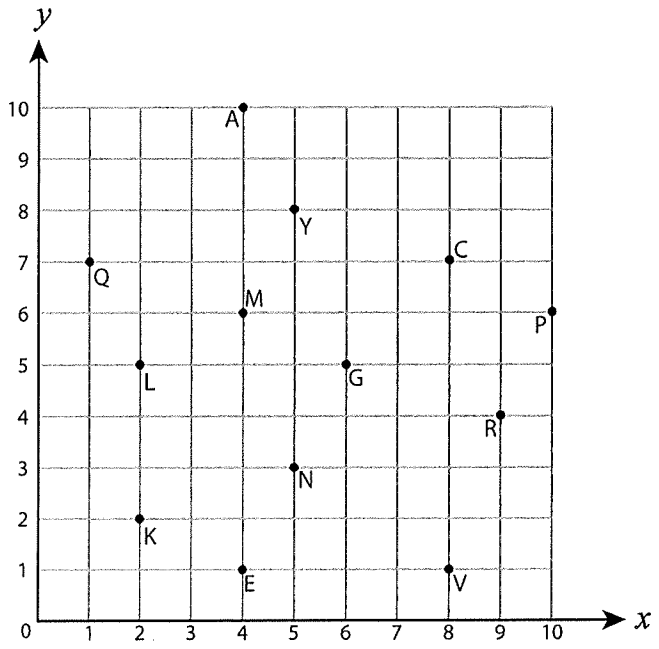
5) (6, 6) _____ 6) (8, 6) _____

7) (4, 9) _____ 8) (4, 4) _____

9) (5, 1) _____ 10) (1, 2) _____



B) Write the ordered pair for each point.



11) G (___ , ___) 12) V (___ , ___)

13) R (___ , ___) 14) C (___ , ___)

15) E (___ , ___) 16) L (___ , ___)

17) Q (___ , ___) 18) A (___ , ___)

19) Y (___ , ___) 20) K (___ , ___)

Name : _____ Score : _____

Identifying Ordered Pairs

A) Write the point that is located at each ordered pair.

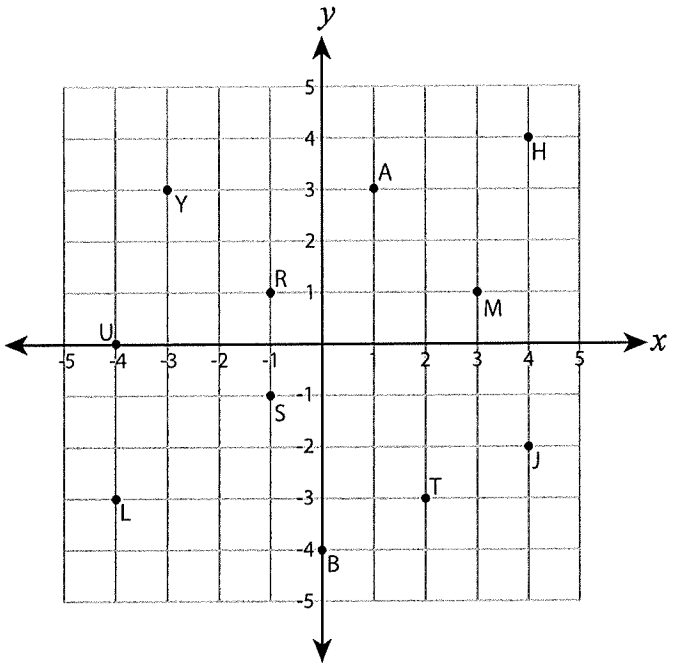
1) (1, 3) _____ 2) (-4, 0) _____

3) (-1, 1) _____ 4) (4, -2) _____

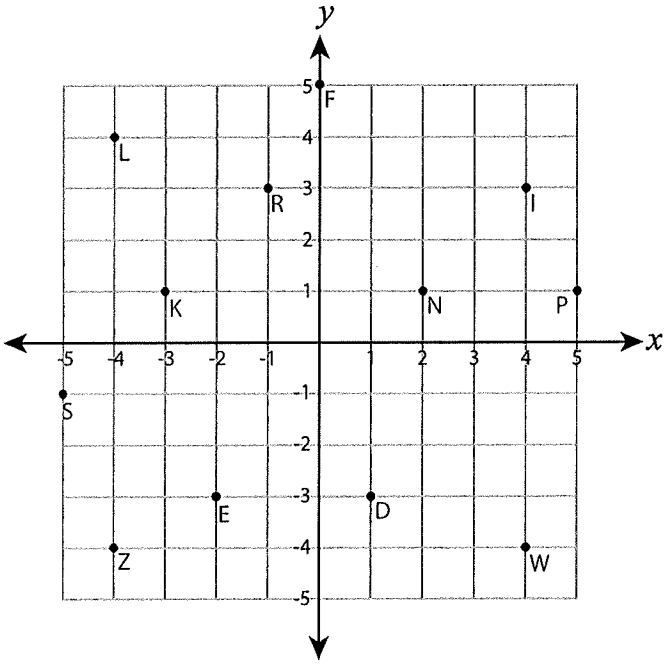
5) (2, -3) _____ 6) (3, 1) _____

7) (4, 4) _____ 8) (0, -4) _____

9) (-3, 3) _____ 10) (-4, -3) _____



B) Write the ordered pair for each point.



11) L(___ , ___) 12) S(___ , ___)

13) E(___ , ___) 14) K(___ , ___)

15) N(___ , ___) 16) F(___ , ___)

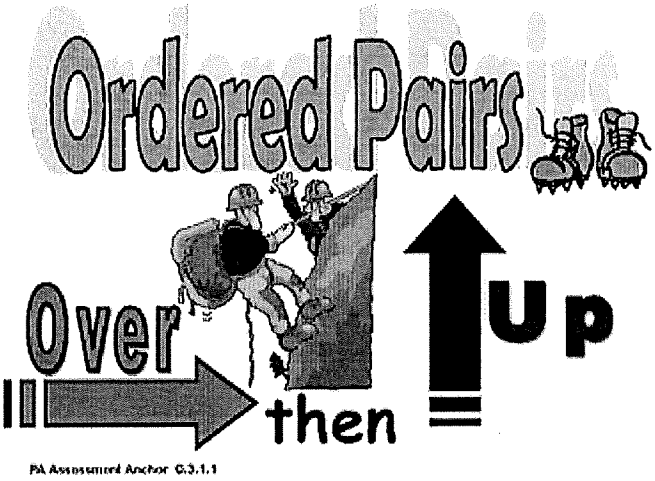
17) I (___ , ___) 18) P(___ , ___)

19) D (___ , ___) 20) Z(___ , ___)

Plotting Points

(x,y)

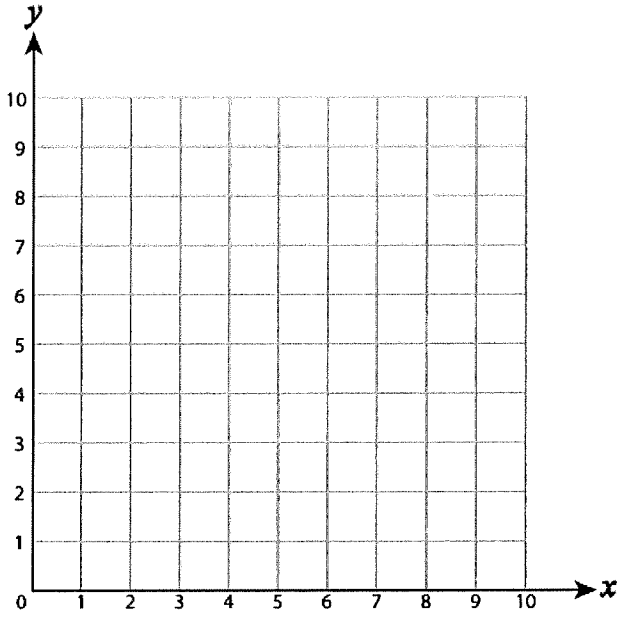
Ordered Pair



PA Assessment Anchor G.3.1.1

A) Plot each point on the coordinate grid.

1) T(3, 3)
2) S(1, 8)
3) H(2, 8)
4) E(6, 2)
5) R(5, 4)
6) L(7, 6)
7) M(3, 1)
8) V(9, 5)
9) P(7, 1)
10) A(4, 7)



A) Plot each point on the coordinate grid.

1) D(-2, 3)
2) H(-1, -5)
3) K(2, 2)
4) U(2, 4)
5) E(-1, -1)
6) L(-3, 5)
7) P(0, 5)
8) A(-3, -4)
9) C(1, 4)
10) G(-1, 0)