

# SUMMER REVIEW PACKET FOR INCOMING SIXTH GRADERS





## Adding and Subtracting Decimals

Find  $1.7 + 2.45$ .

<i>1. Line up the decimal point.</i>		<i>2. Write zeros to show place value.</i>	
$1.7$	$5.37$	$1.70$	$5.37$
$+ 2.45$	$- 2.4$	$+ 2.45$	$- 2.40$
<hr/>		$4.15$	$3.17$
		<i>3. Place decimal point in answer</i>	

Find each sum or difference.

1.  $2.65$   
 $+ 13.30$   

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2.  $14.10$   
 $- 3.05$   

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3.  $744$   
 $+ 36.41$   

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4.  $9$   
 $- 0.6$   

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5.  $8.97$   
 $+ 66$   

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6.  $100$   
 $- 0.22$   

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7.  $6.8$   
 $+ 237.29$   

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8.  $0.5$   
 $- 0.23$   

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9.  $15.4 - 8 =$  \_\_\_\_\_

10.  $3 - 2.54 =$  \_\_\_\_\_

11.  $1.34 + 4.1 =$  \_\_\_\_\_

12.  $133.01 - 5.6 =$  \_\_\_\_\_

13.  $448 + 1.75 + 80.3 =$  \_\_\_\_\_

14.  $12.3 + 0.61 + 100 =$  \_\_\_\_\_

15. On the 3-day of their vacation, the Davis family traveled 417 mi, 45.3 mi, and 366.9 mi. How far did they travel all together?

\_\_\_\_\_

16. Etta bought a calculator for \$15. Glenn found the same model for \$ 9.79. How much more did Etta pay than Glenn did?

\_\_\_\_\_

## Multiplying Whole Numbers

Find  $124 \times 32$ .

Multiply ones.	Multiply tens.	Add the partial products.
$\begin{array}{r} 124 \\ \times 32 \\ \hline 248 \end{array}$	$\begin{array}{r} 1 \\ 124 \\ \times 32 \\ \hline 248 \\ 3720 \end{array}$	$\begin{array}{r} 124 \\ \times 32 \\ \hline 248 \\ +3720 \\ \hline 3,968 \end{array}$

Find each product

1. 
$$\begin{array}{r} 38 \\ \times 17 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 56 \\ \times 43 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 82 \\ \times 4 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 92 \\ \times 13 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 432 \\ \times 21 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 185 \\ \times 42 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 603 \\ \times 65 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 774 \\ \times 96 \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 198 \\ \times 30 \\ \hline \end{array}$$

10. 
$$\begin{array}{r} 800 \\ \times 11 \\ \hline \end{array}$$

11. 
$$\begin{array}{r} 567 \\ \times 37 \\ \hline \end{array}$$

12. 
$$\begin{array}{r} 690 \\ \times 72 \\ \hline \end{array}$$

13.  $55 \times 8 =$  \_\_\_\_\_

14.  $40 \times 16 =$  \_\_\_\_\_

15.  $4 \times 905 =$  \_\_\_\_\_

16. A delivery truck carried 144 color television sets. Each set weighed 34 lb. Write the weight of the entire shipment.

\_\_\_\_\_

17. Joy ran 42 miles a week to train for the Boston Marathon. How many miles did she run after 12 weeks?

\_\_\_\_\_

## Multiplying with Decimals

- Multiply a decimal by a decimal as if the two numbers were whole numbers.
- Then count the number of digits to the right of the decimal point in **each** factor.
- Insert the decimal point in the product by counting over the appropriate number of places from the **right**. In some cases, you may have to “annex” the zeros (add zeros).

### Examples:

$$\begin{array}{r} 73.7 \leftarrow \boxed{1} \\ \times 0.6 \leftarrow \boxed{1} \\ \hline 44.22 \leftarrow \boxed{2} \end{array}$$

$$\begin{array}{r} 0.83 \leftarrow \boxed{2} \\ \times 2.9 \leftarrow \boxed{1} \\ \hline 2.407 \leftarrow \boxed{3} \end{array}$$

$$\begin{array}{r} 0.257 \leftarrow \boxed{3} \\ \times 1.3 \leftarrow \boxed{1} \\ \hline 0.3341 \leftarrow \boxed{4} \end{array}$$

$$\begin{array}{r} 0.052 \leftarrow \boxed{3} \\ \times 0.03 \leftarrow \boxed{2} \\ \hline 0.00156 \leftarrow \boxed{5} \end{array}$$

### Multiply.

1.  $\begin{array}{r} 42.6 \\ \times 4 \\ \hline \end{array}$

2.  $\begin{array}{r} 46 \\ \times 0.8 \\ \hline \end{array}$

3.  $\begin{array}{r} 0.19 \\ \times 0.08 \\ \hline \end{array}$

4.  $\begin{array}{r} 149.2 \\ \times 7.5 \\ \hline \end{array}$

5.  $\begin{array}{r} 3.14 \\ \times 0.267 \\ \hline \end{array}$

6.  $\begin{array}{r} 0.265 \\ \times 0.062 \\ \hline \end{array}$

7.  $\begin{array}{r} 0.45 \\ \times 0.3 \\ \hline \end{array}$

8.  $\begin{array}{r} 0.229 \\ \times 0.006 \\ \hline \end{array}$

9.  $\begin{array}{r} 2.877 \\ \times 0.4 \\ \hline \end{array}$

10.  $\begin{array}{r} 2.243 \\ \times 0.09 \\ \hline \end{array}$

11.  $\begin{array}{r} 4.2 \\ \times 6 \\ \hline \end{array}$

12.  $\begin{array}{r} 114.2 \\ \times 0.4 \\ \hline \end{array}$

13.  $\begin{array}{r} 46.7 \\ \times 6.7 \\ \hline \end{array}$

14.  $\begin{array}{r} 20.14 \\ \times 0.11 \\ \hline \end{array}$

15.  $\begin{array}{r} 5.1 \\ \times 0.005 \\ \hline \end{array}$

16. Thomas bought 6 packs of gum for  $.75¢$ . How much did he pay for all of the packs of gum? \_\_\_\_\_

If he gave the sales clerk \$10.00, how much change did he receive? \_\_\_\_\_

17. Ryan bought 3.2 yards of fabric that sells for \$ 2.35 a yard. How much did he pay for the fabric? \_\_\_\_\_

18. A sightseeing boat tour makes 4 trips each day. It travels 9.75 total miles on each trip. How many miles does the boat travel in 6 days? \_\_\_\_\_



## Dividing With Decimals

Find  $36.8 \div 16$ .

	Place the decimal point		
2.	2	$16 \overline{)36.8}$	$\begin{array}{r} 2.3 \\ 16 \overline{)36.8} \\ \underline{32} \phantom{.} \\ 4.8 \\ \underline{4.8} \\ 0 \end{array}$
$16 \overline{)36.8}$	Think: $20 \overline{)40}$		Multiply $2 \times 16$
	Try 2 in the quotient		4.8 Subtract. Bring down .8
			4.8 Multiply $0.3 \times 16$
			0 Subtract

**Find each quotient.**

1)  $6 \overline{)13.8}$

2)  $6 \overline{)131.4}$

3)  $9 \overline{)141.3}$

4)  $5 \overline{)388.5}$

5)  $7 \overline{)669.2}$

6)  $25 \overline{)263.2}$

7)  $41 \overline{)274.7}$

8)  $7 \overline{)34.23}$

9)  $269.12 \div 8 =$  \_\_\_\_\_

10)  $311.356 \div 4 =$  \_\_\_\_\_

11)  $2,229.62 \div 46 =$  \_\_\_\_\_

12)  $1,449.09 \div 81 =$  \_\_\_\_\_

13) A carpenter bought 36 hammers for \$136.44. What was the cost of one hammer? \_\_\_\_\_

## Problem Solving: Analyzing Word Problems

To improve his vocabulary, Damon learned 15 new words each week. How many words did he learn in 10 weeks?	Operation: He learned <b>15 words per week</b> There were <b>10 weeks</b> . I will use <b>multiplication</b> .  Solution : $15 \times 10 = 150$ Damon <b>learned 150 new words</b> .
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### *Solve each word Problem*

1. For Class Day activities, the 594 students at West Side School were divided into 18-student teams. How many teams were there?
2. Donald loaded a 387.5 lb piano lamp, and a 59 lb desk into his pickup truck. What was the total weight in the pickup?
3. The \$198 bike that Ira wants is on sale for \$149.95. How much can he save by buying the bike on sale?
4. Taylor's 14 minute phone call cost \$8.40. How much did the call cost per minute?
5. At the fish store, Larry bought a 1.2 lb flounder filet. The price of the flounder filet was \$3.95 per lb. How much did the filet cost?

**Order of Operations** – evaluate an expression by using the order of operations.

Order of Operations

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1. Do the operations in the parenthesis
2. Simplify exponents.
3. Multiply and divide from left to right.
4. Add and subtract from left to right.

**Examples:**

<p>Evaluate <math>3^2 + (4 \div 2)</math></p> $\begin{array}{r} 2 \\ 2 \overline{)4} \end{array}$ <p><math>3^2 + (4 \div 2)</math> Operate within the parentheses. <math>3^2 + 2</math> Simplify the exponent. <math>3 \times 3 = 9</math> <math>9 + 2</math> Add 11</p> <p>The value of the expression is 11.</p>	<p>Evaluate <math>(29 - 5) + 2^3</math></p> $\begin{array}{r} 4 \\ (29 - 5) + 2^3 \end{array}$ <p>Operate within the parentheses.</p> $\begin{array}{r} 4 \\ \underline{24} + 2^3 \end{array}$ <p>Simplify the exponents <math>2 \times 2 \times 2 = 8</math> Divide. <math>24 \div 4 = 6</math> <math>6 + 8</math> Add 14</p> <p>The value of the expression is 14.</p>
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**Practice** – Evaluate each expression. Write the steps you use to evaluate.

1.  $3 + 8 \div 2$
2.  $(5 + 3) \times 7$
3.  $\frac{(12 - 3) \times 8}{3}$
4.  $5^2 - (10 - 6)$
5.  $(5 \times 2) + (8 - 3)$
6.  $(18 + 18) \div 3^2$
7.  $\frac{(16 - 7) + 6^2}{9}$
8.  $7 + 2 \times 3 \div 2$

## Inverse Operations

**Think:**

	<u>Equation</u>	<u>Inverse</u>
Addition is the inverse of operation of subtraction	$n - 12 = 5$	$5 + 12 = n$
Subtraction is the inverse operation of addition	$n + 4 = 10$	$10 - 4 = n$
Multiplication is the inverse operation of division	$48 \div n = 12$	$12 \times n = 48$
Division is the inverse operation of multiplication	$n \times 3 = 18$	$18 \div 3 = n$

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**Use the inverse operation to write an equation. Solve.**

1.  $n - 7 = 2$

Equation:

\_\_\_\_\_

n = \_\_\_\_\_

2.  $n + 12 = 25$

Equation:

\_\_\_\_\_

n = \_\_\_\_\_

3.  $32 \div n = 8$

Equation:

\_\_\_\_\_

n = \_\_\_\_\_

4.  $5 \times n = 30$

Equation:

\_\_\_\_\_

n = \_\_\_\_\_

5.  $18 - n = 11$

Equation:

\_\_\_\_\_

n = \_\_\_\_\_

6.  $n + 12 = 27$

Equation:

\_\_\_\_\_

n = \_\_\_\_\_

7.  $63 \div n = 9$

Equation:

\_\_\_\_\_

n = \_\_\_\_\_

8.  $9 \times n = 81$

Equation:

\_\_\_\_\_

n = \_\_\_\_\_

9.  $39 - 24 = 15$

$15 + 24 =$

\_\_\_\_\_

10.  $43 + 52 = 95$

$95 - 52 =$

\_\_\_\_\_

11.  $45 \div 9 = 5$

$5 \times 9 =$

\_\_\_\_\_

12.  $6 \times 22 = 132$

$132 \div 22 =$

\_\_\_\_\_

13.  $220 \div 11 = 20$

\_\_\_\_\_

14.  $135 + 253 = 388$

\_\_\_\_\_

15.  $15 \times 32 = 480$

\_\_\_\_\_

16.  $348 - 172 = 196$

\_\_\_\_\_

## INVERSE OPERATIONS

Inverse operations are operations that undo each other.

ADDITION AND SUBTRACTION	MULTIPLICATION AND DIVISION
<p>You can use addition to solve a subtraction equation.  <math>N - 15 = 8</math>  <b>THINK:</b> 8 plus 15 is what number?  <math>8 + 15 = 23</math> Then: <math>n - 15 = 8</math>  <math>23 - 15 = 8</math></p> <p>You can subtract to solve an addition equation.  <math>N + 6 = 11</math>  <b>THINK:</b> 11 minus 6 is what number?  <math>11 - 6 = 5</math> Then: <math>n + 6 = 11</math>  <math>5 + 6 = 11</math></p> <p>You can use addition to check subtraction and subtraction to check addition.</p>	<p>You can use multiplication to solve a division equation.  <math>36 \div n = 9</math>  <b>THINK:</b> What number times 9 is 36?  <math>4 \times 9</math> is 36 Then : <math>36 \div n = 9</math>  <math>36 \div 4 = 9</math></p> <p>You can use division to solve a multiplication equation.  <math>N \times 5 = 35</math>  <b>THINK:</b> <math>35 \div 5 = 7</math> then: <math>n \times 5 = 35</math>  <math>7 \times 5 = 35</math></p> <p>You can use multiplication to check division and division to check multiplication.</p>

### TRY THESE.....

Choose addition, subtraction, multiplication or division for the inverse operation.  
 Write and solve the equation.

1)  $9 - n = 5$

Inverse operation \_\_\_\_\_

Equation: \_\_\_\_\_

Solution:  $n =$  \_\_\_\_\_

2)  $n + 3 = 7$

Inverse operation \_\_\_\_\_

Equation: \_\_\_\_\_

Solution:  $n =$  \_\_\_\_\_

3)  $24 \div n = 4$

Inverse operation \_\_\_\_\_

Equation: \_\_\_\_\_

Solution:  $n =$  \_\_\_\_\_

4)  $6 \times n = 12$

Inverse operation \_\_\_\_\_

Equation: \_\_\_\_\_

Solution:  $n =$  \_\_\_\_\_



# PRACTICE ON YOUR OWN

Do the operation inside the parentheses first.

Evaluate

Associative Property  
Multiplication

Distributive Property of  
Multiplication

$$\begin{array}{c} 4 \times (2 + 6 + 1) \\ \downarrow \\ 4 \times 9 \\ 36 \end{array}$$

$$\begin{array}{c} 6 \times (4 \times 5) = (6 \times 4) \times 5 \\ \downarrow \\ 6 \times (4 \times 5) = (a \times 4) \times 5 \\ \text{So, } a = 6 \end{array}$$

$$\begin{array}{c} (5 \times 3) + (5 \times 2) = b \times (3 + 2) \\ \downarrow \\ (5 \times 3) + (5 \times 2) = 5 \times (3 + 2) \\ \text{So, } b = 5 \end{array}$$

.....  
**Evaluate the expression.**

1)  $(4 + 6) + 3$

2)  $(10 - 4) + 6$

3)  $7 \times (3 \times 2)$

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

4)  $(15 - 6) + 8$

5)  $15 - (6 + 8)$

6)  $(5 \times 3) \times 10$

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

Answer: \_\_\_\_\_

.....  
**Find the value of the variable.**

1)  $(4 \times 6) + (4 \times 1) = c \times (6 + 1)$   
 $(4 \times 6) + (4 \times 1) = 4 \times (6 + 1)$   
**c** = \_\_\_\_\_

2)  $a + (3 + 5) = (2 + 3) + 5$   
 $2 + (3 + 5) = (2 + 3) + 5$   
**a** = \_\_\_\_\_

3)  $7 \times (6 + 2) = (b \times 6) + (b \times 2)$   
**b** = \_\_\_\_\_

4)  $y + 6 + 9 = 9 + 6 + 1$   
**y** = \_\_\_\_\_

.....  
**CHECK**

**Evaluate.**

1)  $27 + (30 - 7)$   
\_\_\_\_\_

2)  $35 - (24 + 11)$   
\_\_\_\_\_

**Solve for y.**

3)  $7 \times (6 + 2) = (y \times 6) + (Y \times 2)$

## SAMPLE SPACE

### Vocabulary:

**Sample space**-a list of all the possible outcomes/results

**Probability**-the chance that an event will happen

**Event**-a specific outcome/result or type of outcome/result

**Outcome**-possible result of an action

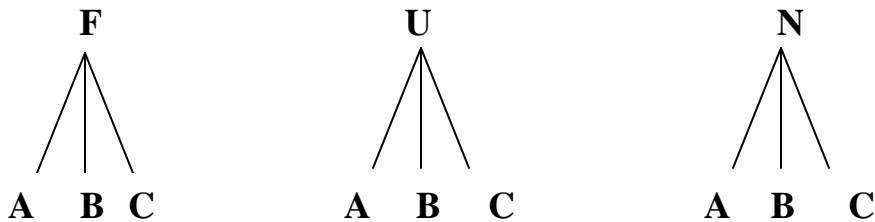
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1. What are all of the possible combinations if you choose one card from each set shown below?



A list of all of these outcomes is called a sample space.

- A. Draw a tree diagram.



How many possible outcomes are there? \_\_\_\_\_

- B. (or) Make a Table.

First Card	Second Card	Number of Possible Outcomes
F	A, B, or C	3
U	A, B, or C	3
N	A, B, or C	3

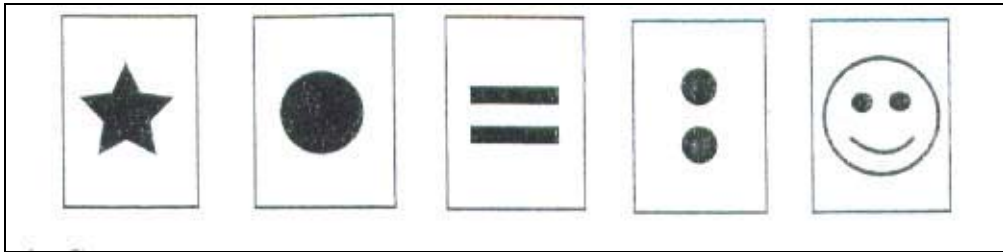
How many possible outcomes are there in all? \_\_\_\_\_

2. Make a list of the possible outcomes for rolling a six-sided number cube once.

3. Make a sample space by completing the tree diagram of the possible outcomes for rolling the six-sided cube twice.



*use these cards for Problems 4 and 5.*



4. Suppose these cards were shuffled, turned face down, and you picked one without looking. Make a sample space.

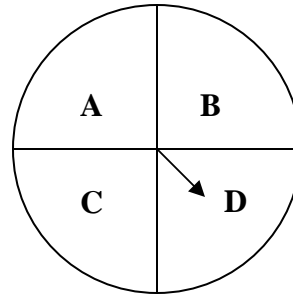
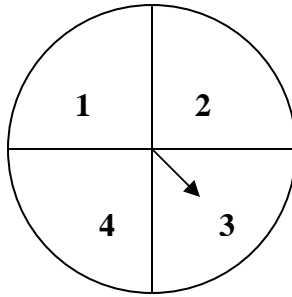
5. How many possible outcomes are there for your second card choice, if you choose the star card first and then replace it?

6. List the possible outcomes for choosing a number between 5 and 15 at Random.

7. Complete the table of the possible outcomes of tossing a coin three times. Use H for heads and T for tails.

	1	2	3	4	5	6	7	8
1 <sup>st</sup> Toss	H	T	H			T		
2 <sup>nd</sup> Toss	H	T				T		
3 <sup>rd</sup> Toss	H	T						

8. Look at the spinner below. Make a tree diagram to show the possible Outcomes if you spin each spinner once.



How many possible outcomes are there?

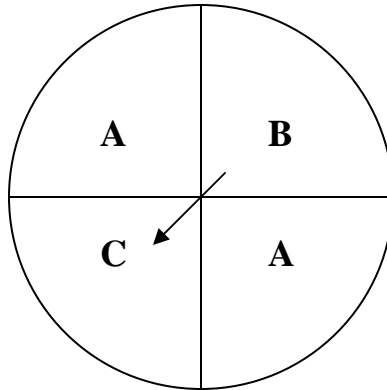
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# PROBABILITY

What is the probability of spinning an A?

$\frac{2}{4}$  ← number of A's  
 ← total possible outcomes

Since, there are 2 chances out of 4 of spinning an A,  
 the probability is



What is the probability of spinning a B?

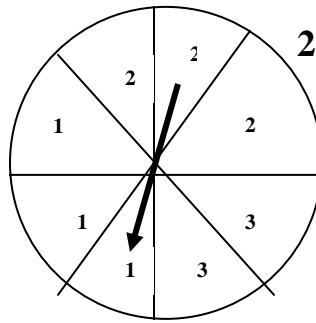
$\frac{1}{4}$  ← number of B's  
 ← total possible outcomes

Since there is 1 chance out of 4 of spinning a B,  
 the probability is

$$P = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}}$$

1. What is the probability of spinning a 1?

← number of 1's  
 ← total possible outcomes

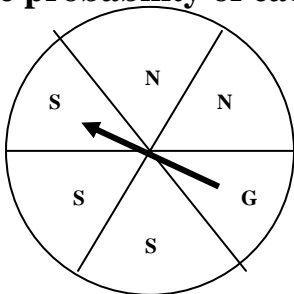


2. What is the probability of spinning a 3?

← number of 3's  
 ← total possible outcomes

The probability is \_\_\_\_\_.

Give the probability of each outcome.



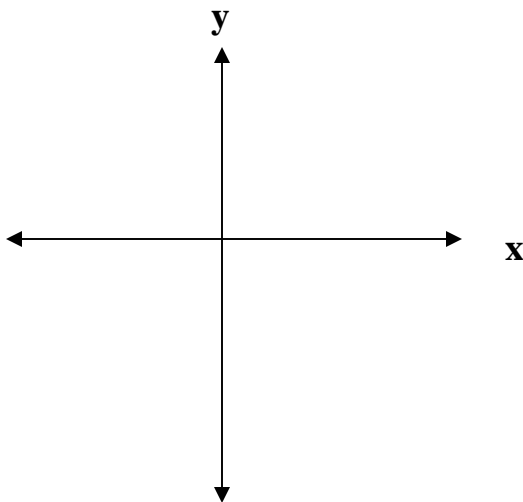
3. spinning an N \_\_\_\_\_      4. spinning an S \_\_\_\_\_  
 5. spinning an S or G \_\_\_\_\_      6. spinning an S, G, or N \_\_\_\_\_

A number cube has 6 sides numbered 1, 2, 3, 4, 5, 6. Find each probability.

7. rolling a 3 \_\_\_\_\_      8. rolling an even number \_\_\_\_\_  
 9. rolling 3, 4, 5, or 6 \_\_\_\_\_      10. rolling anything but 1 \_\_\_\_\_

# THE COORDINATE PLANE

Here is a picture of a **plane**. Two lines are drawn inside the plane. Each of these lines is an **axis**. The axes are like landmarks that we can use to find different places on a plane. The axis that goes from side to side (horizontal) is the x-axis, and the axis that goes straight up and down (vertical) is the y-axis.



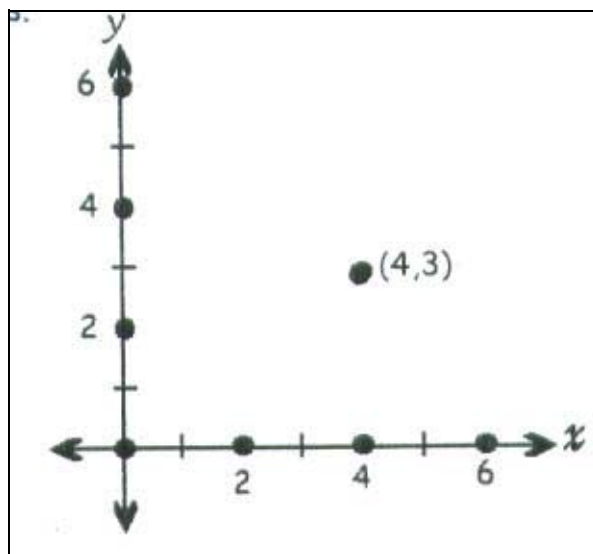
Let's zoom in on one corner of the plane. (This corner is called the **first quadrant**.) Some of the points on each axis have been numbered to make them easier to find. The point where the two axes cross is called the **origin (O)**

We can find every point in the plane using two numbers. These numbers are called **coordinates**. We write a point's coordinates inside parentheses, separated by a comma, like this: (4,3). Coordinates written this way are called an **ordered pair**.

- The first number in an ordered pair is called the x-coordinate. The **x-coordinate** tells us how far the point is along the x-axis.
- The second number is called the y-coordinate. The **y-coordinate** tells us how far the point is along the y-axis.

Follow the steps given to locate the Point for the ordered pair (4,3).

- Step 1**      **Start at O**
- Step 2**      **Move along the x-axis**  
**4 spaces to the right.**
- Step 3**      **Move along the y-axis**  
**3 spaces up.**

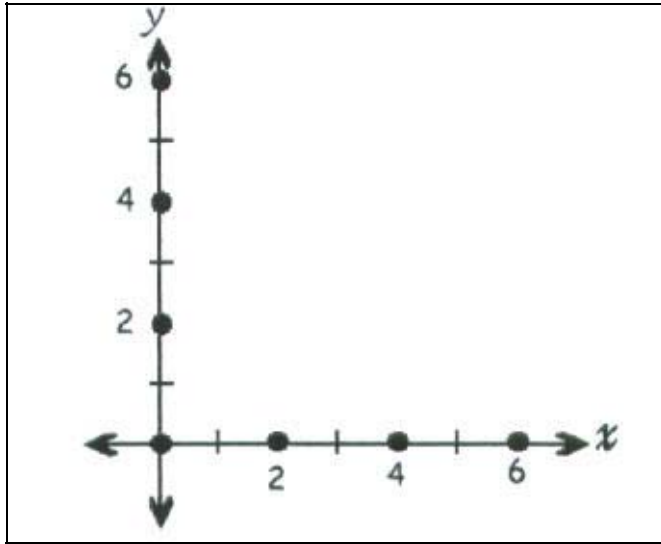


# GRAPHING POINTS IN THE PLANE

*When given a coordinate, you can find its place on the coordinate plane.*

1. On the coordinate plane, plot the ordered pairs, and label the points:

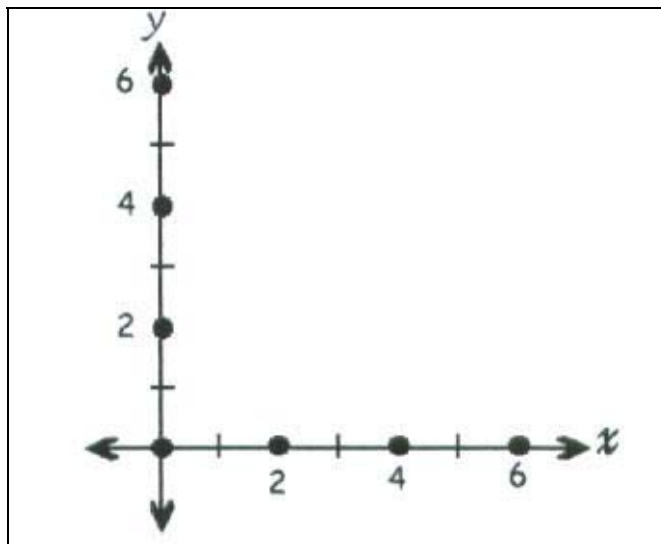
Point A (2,1)      Point B (4,5)      Point C (6,1)



Connect the points and label the geometric figure you have created.

2. On the coordinate plane, plot the ordered pairs, and label the points.

Pont A (3,1)      Pont B (2,3)      Point C (3,5)  
Point D (5,5)      Point E (6,3)      Point F (5,1)



• Connect the points and label the geometric figure you have created.

# COORDINATE PLANE

Important terms:

- \* **Coordinate plane** – a grid used to locate points by means of ordered pairs of numbers
- \* **Ordered pairs** – (also called coordinates) are the pairs of numbers used to locate points on a coordinate plane
- \* **X-axis** – the horizontal axis on a coordinate plane
- \* **Y-axis** – the vertical axis on a coordinate plane
- \* **Origin** – the point where the 2 axes intersect with coordinates of (0,0)

To graph points on the coordinate plane, follow these steps:

An ordered pair is written: ( \_\_, \_\_ )

The first number indicates the number on the x-axis.

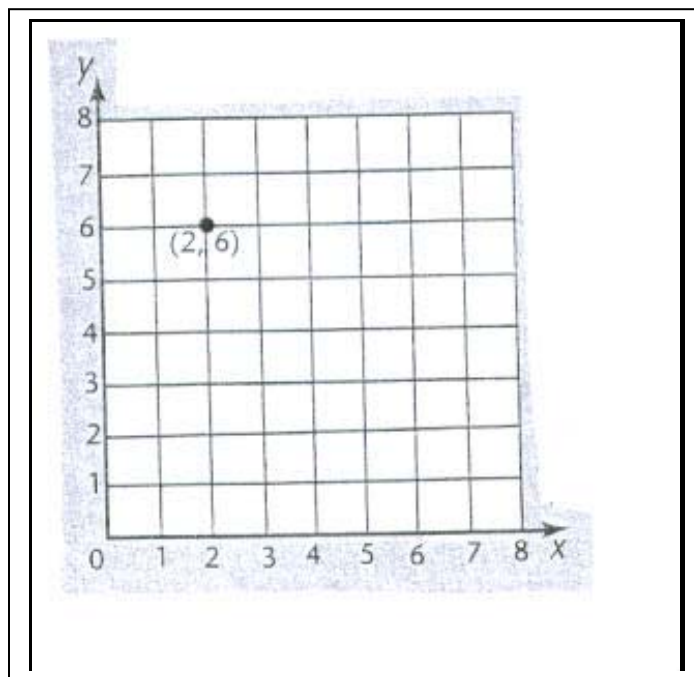
The second number always indicates the y-axis.

Positive numbers are to the right of the origin on the x-axis and above the origin on the y-axis.

Negative numbers are to the left of the origin on the x-axis and below the origin on the y-axis.

Therefore, the grid shows the ordered pair (2,6).

Graph the ordered pair (3,5) on the grid.

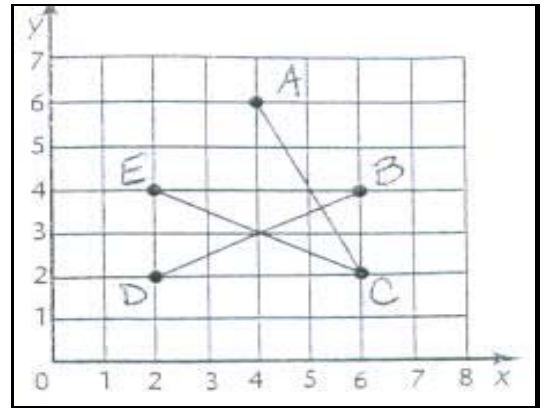


## Coordinate Plane

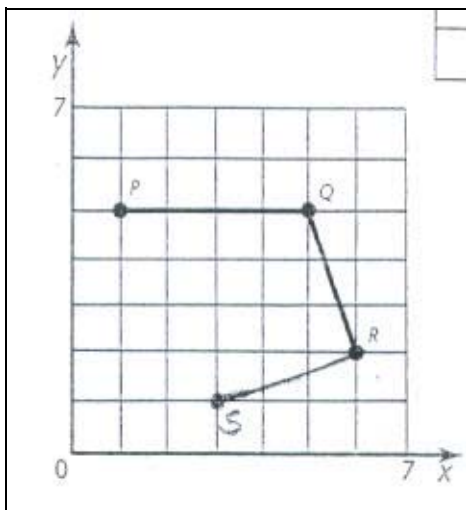
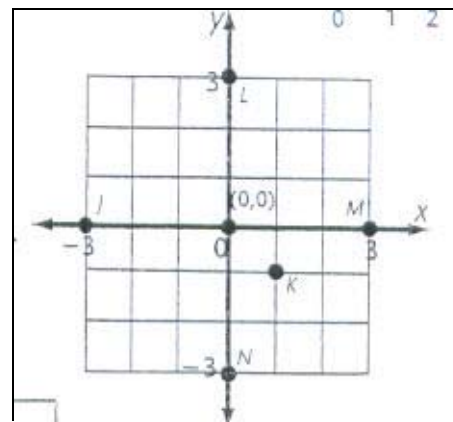
- On the graph, connect 2 points to complete the star. Name those 2 points and tell the coordinates of each.

Point \_\_\_\_ ( \_\_\_\_, \_\_\_\_ )

Point \_\_\_\_ ( \_\_\_\_, \_\_\_\_ )



- Tell the coordinates of Point M.

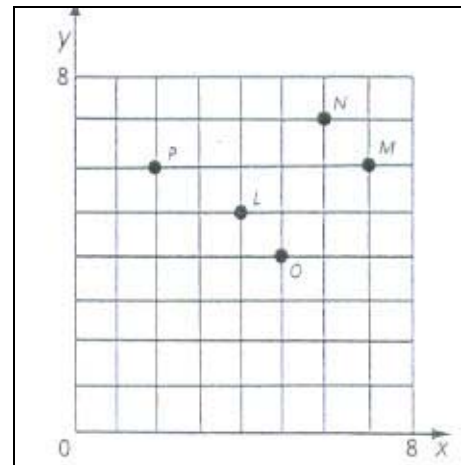


- Connect points on the grid to create a quadrilateral. What are the coordinates of Point P and S?

Point P ( \_\_\_\_, \_\_\_\_ )

Point S ( \_\_\_\_, \_\_\_\_ )

4. Connect 4 points to form a rectangle.  
Tell the ordered pair for Point P. ( \_\_\_\_, \_\_\_\_)



5. Use the grid to graph  
the ordered pairs for a parallelogram.  
Label the points A, B, C, D.  
Tell the coordinates of each.

A ( \_\_\_\_, \_\_\_\_)    C ( \_\_\_\_, \_\_\_\_)  
B ( \_\_\_\_, \_\_\_\_)    D ( \_\_\_\_, \_\_\_\_)

