Lesson # 57

# Multiplication and Division Inequalities

Date

## Warmup

**1.** Solve for t:

5t = 65

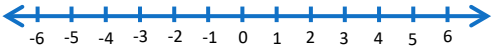
**2.** Solve for p:

$\frac{p}{4} = 36$

**3.** What percent of 90 is 40.5?

**4.** Solve for r, then graph the solution.

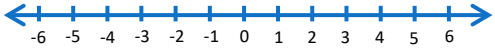
R+7 ≤ 11




## I. Solve Multiplication Inequalities

Solve and Graph:

$2h \geq 8$

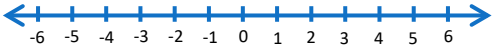



### To solve multiplication Inequality

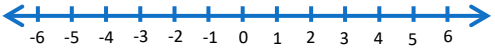
1. Divide both sides by the same amount.
2. Simplify
3. Use a test variable to check the answer.

**5.** Solve and Graph:

$5.5\ t > 11$




**6.**



## II. Solve Division Inequalities

Solve and Graph:

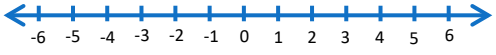
$\frac{s}{4} \geq 8$

**To solve division Inequality**

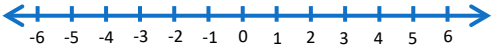
1. Multiply both sides by the same amount.
2. Simplify
3. Use a test variable to check the answer.

**7.** Solve and Graph:

$\frac{m}{3} \leq 2$




**8.**




## III. Practice

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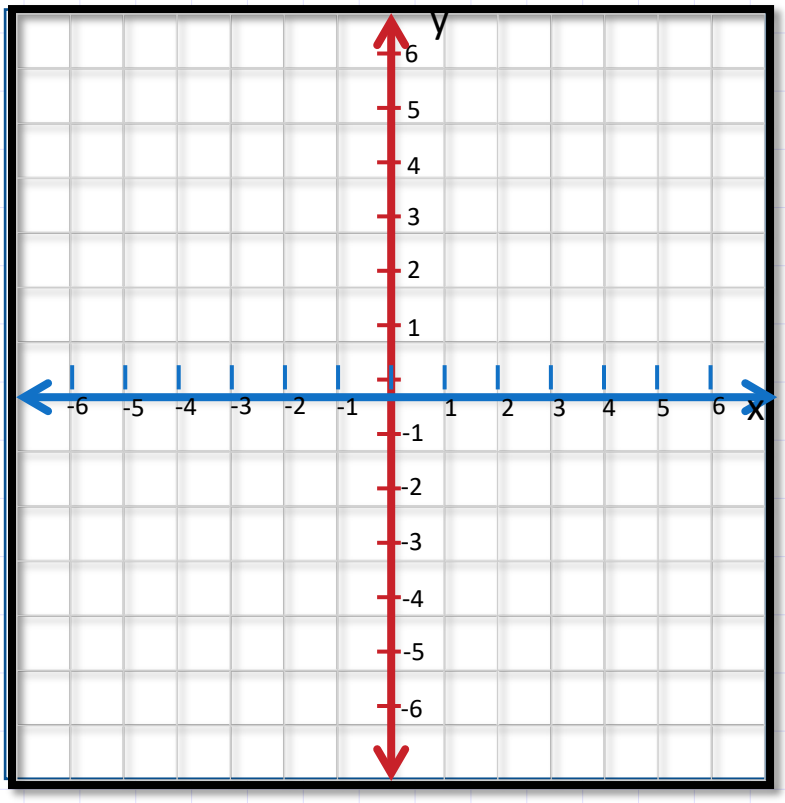


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25 Start at the blue dot. Draw a rectangle such that it is 5 steps wide by 10 steps long. The tip of your **pencil can not** come off the paper. Write the directions for drawing the square. You may use the following 'commands':

The arrow on the dot shows the direction the pencil can travel. It is facing to the right here. It can only travel to the right. (until it is turned)

To make the pencil move forward _____ squares use: Move _____ steps

To turn, determine if you want to go left or right, and how many degrees.

To turn left: Turn Left _____ degrees

To turn right: Turn Right _____ degrees

The first step is shown in purple.

The second step is started.

Directions:

Move 5 steps

Turn Right _____ degrees

Success Check # _____

Name:

Date:

Lesson # 58

# Area of Trapezoids

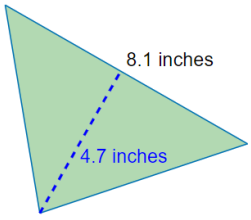
Date

## Warmup

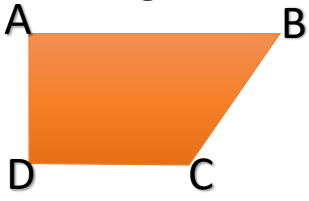
**1.** Use the distributive property to fill in the equation.

5xy + 5xz = _____( y + _____)

**2.** Calculate the Area




**3.** Given Quadrilateral ABCD, answer the following.



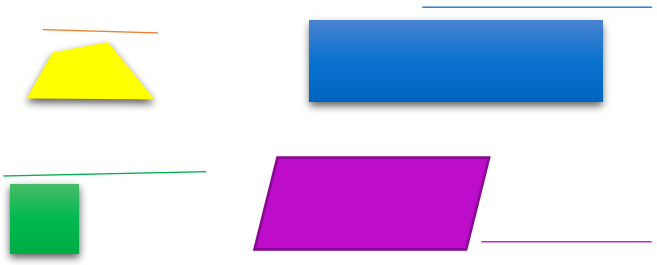

parallel sides:

_____

perpendicular sides:

_____

**4.** Classify each polygon.

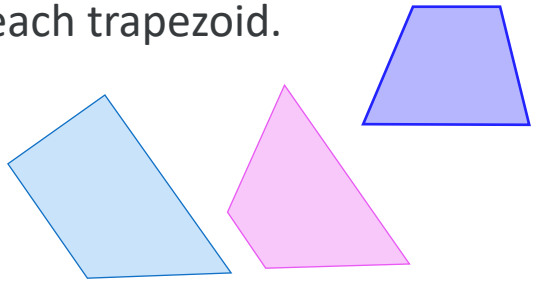


## I. Definition of a Trapezoid

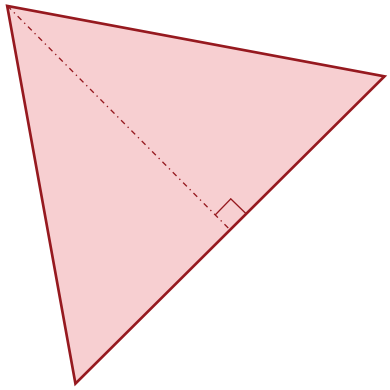
### Trapezoid

A quadrilateral with exactly one pair of parallel sides.

Mark the parallel sides of each trapezoid.

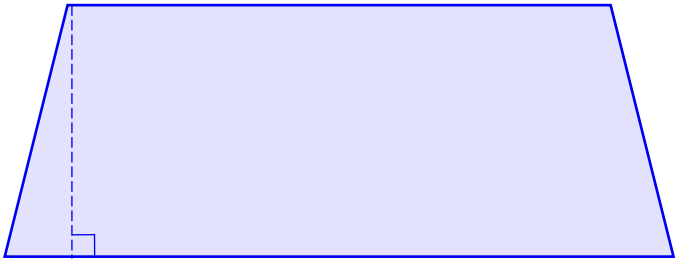


Label the base and the height of the triangle



**The base and height form a _____ angle.**

Label the base and the height of the trapezoid

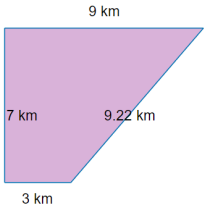


A trapezoid has _____.

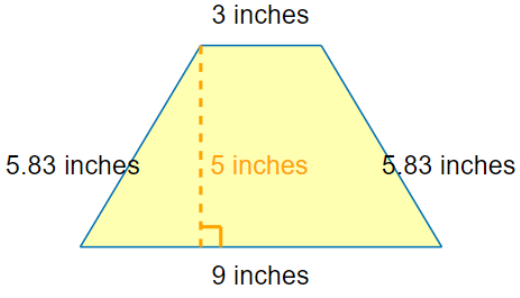
The height is _____ to the bases.

## II. Perimeter of a Trapezoid

To calculate the perimeter of a trapezoid:



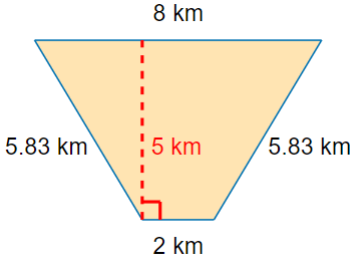

**6.** Calculate the perimeter of the trapezoid



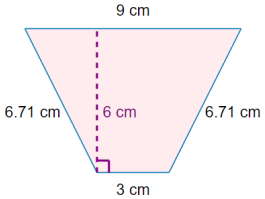

**7.** Draw the trapezoid pictured, then calculate its perimeter.

## III. Area of a Trapezoid

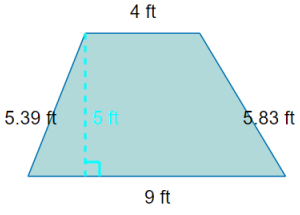
To calculate the area of a trapezoid:




**8.** Calculate the area of the trapezoid




**9.** Calculate the area of the trapezoid



**10.** Draw the trapezoid pictured, then calculate its area.

## IV. Practice

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| 14 | 15 | |
| 16 | 17 | |
| 18 | 19 | |

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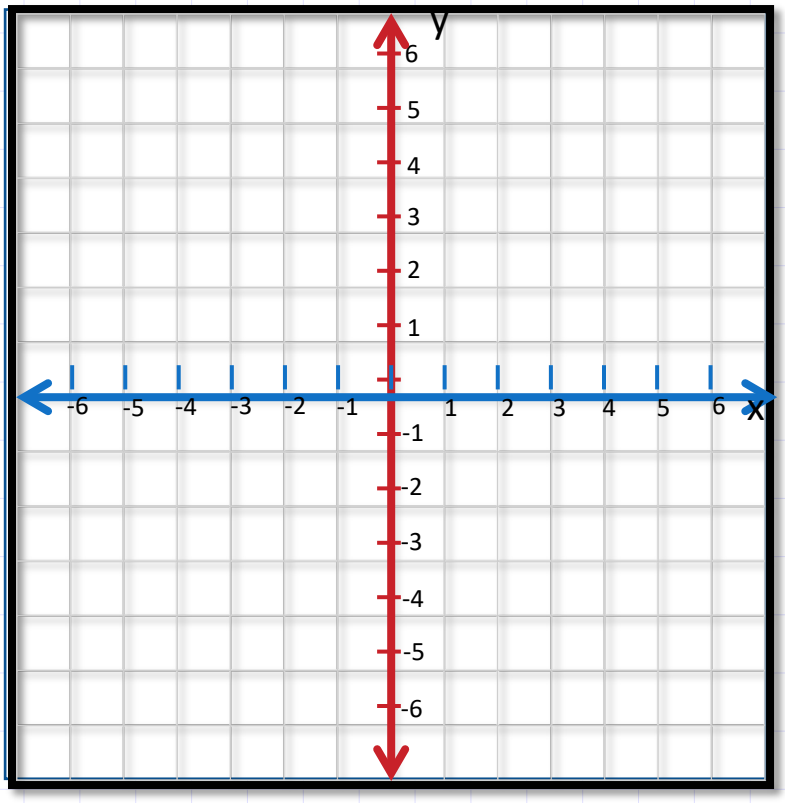


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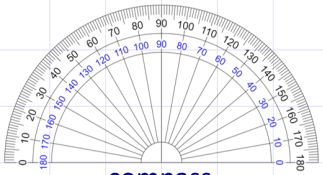
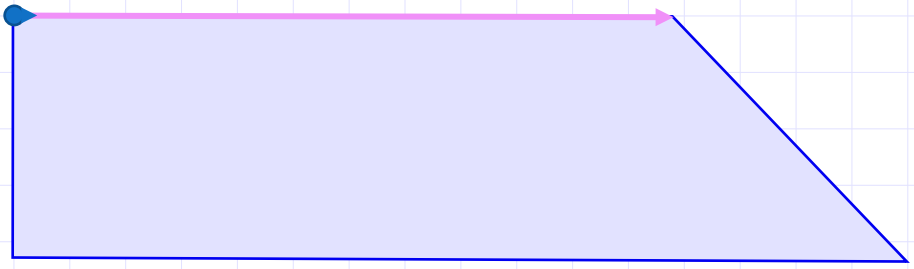
27 Start at the blue dot. Write the directions for drawing the trapezoid shown. You must use the following 'commands':

The arrow on the dot shows the direction the pencil can travel.
It is facing to the right here. It can only travel to the right.
(until it is turned) (You may use a compass to measure the angles.)


compass

To make the pencil move forward _____ squares use: Move _____ steps

To turn, determine if you want to go left or right, and how many degrees.
To turn left: Turn Left _____ degrees
To turn right: Turn Right _____ degrees



The first step is shown in purple.

The second step is started.

Directions:
Move 12 steps
Turn Right _____ degrees

Success Check # _____

Name:

Date:

Lesson # 59

# Precents, Fractions, Decimals and Pie Charts

Date

## Warmup

**1.** Four girls chose a purple dress. If there were 25 girls, what percent chose a purple dress?

**2.** A class survey was taken regarding the number of pets the families have. The results are 4, 2, 1, 0, 6, 3, 2, 4, 5, 4, and 1. What is the mean, median, mode and range of the data?

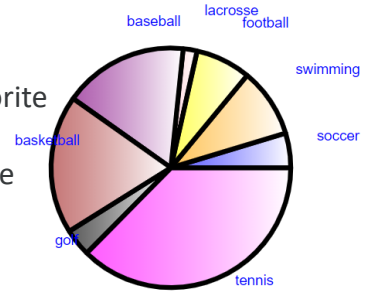
Mean: _____

Median: _____

Mode: _____

Range: _____

**3.** The students in math class were asked what their favorite sport is. The data was graphed in the following pie chart.




**4.** Identify the measurement of each:

Acute angle: _____

Straight angle : _____

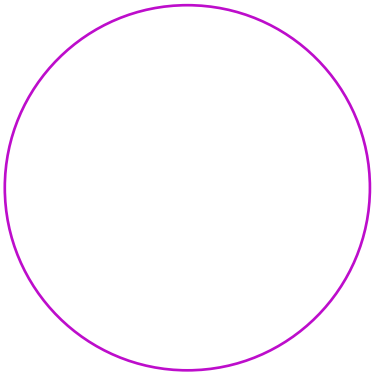
Obtuse angle : _____

Right angle : _____

## I. Shading Part of a Circle or Pie Chart

| Percent | Fraction | Decimal | Shaded Circle |
|---|---|---|---|
| 100% | | | |
| 50% | | | |
| 25% | | | |
| 75% | | | |
| 20% | | | |
| 10% | | | |
| $33\frac{1}{3}\%$ | | | |
| $66\frac{2}{3}\%$ | | | |

**5.** The students in art class were asked what their favorite color is. The data is shown in the table. Sketch the pie graph.



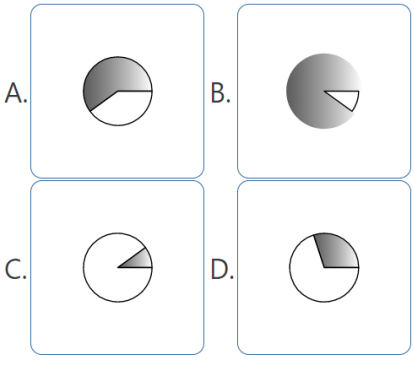
| Color | Number of Students |
|---|---|
| orange | 10 |
| yellow | 45 |
| pink | 25 |
| green | 20 |

**6.**

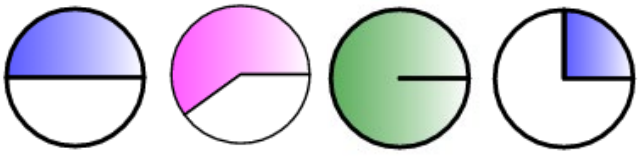
**7.**

## II. Percent on a Pie Chart

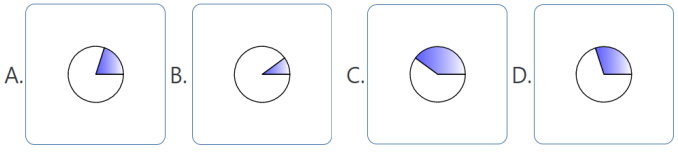
100 people were surveyed to determine their favorite color. 90 people chose black. Which chart shows the correct size slice showing the data for the number of people who




5 out of 20 people surveyed watch tv more than 4 hours a day. Calculate the Percentage of people that watch more than 4 hours of tv. Which pie displays the 'slice' representing 5 out of 20?

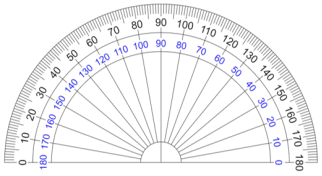


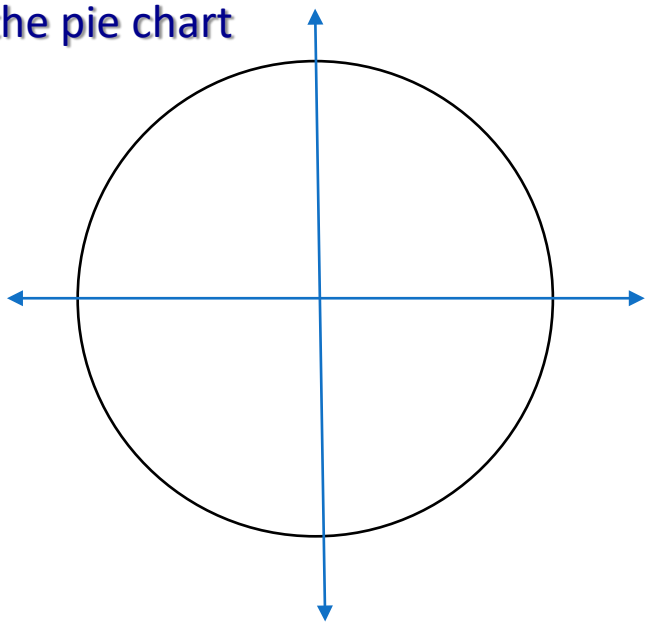
**8.** 10 people were surveyed to determine their favorite color. 3 people chose blue. Which chart shows the correct size slice showing the data for the number of people who chose blue?



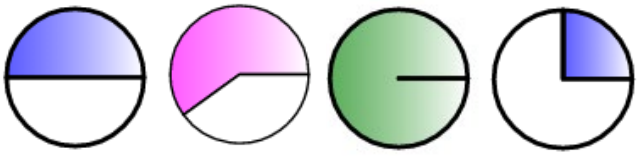

What percent of the pie is shaded? _____%

# III. Determine the size of each slice of the pie chart





5 out of 20 people surveyed watch tv more than 4 hours a day. Calculate the percentage of people that watch more than 4 hours of tv. Which pie displays the 'slice' representing 5 out of 20?

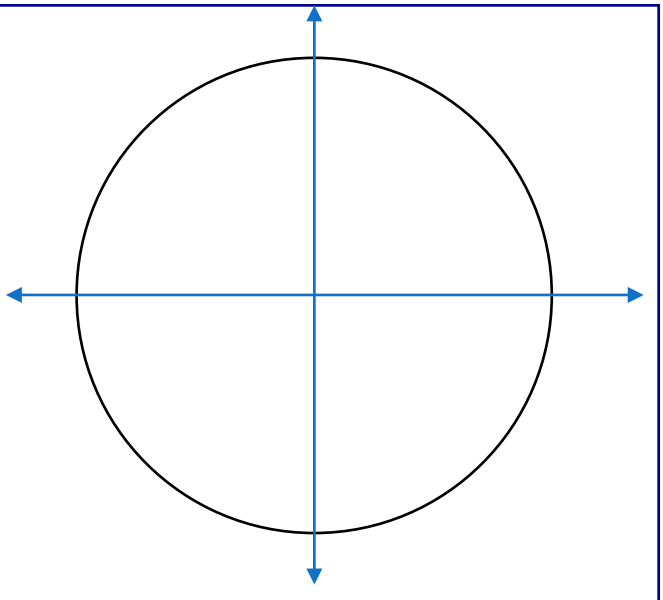


How many degrees is the slice of pie?

8 people were surveyed regarding exercise.

1 person does not exercise.
4 people exercise less than 2 hours a day.
3 people exercise more than 2 hours a day.

Draw the pie graph.



## IV. Practice

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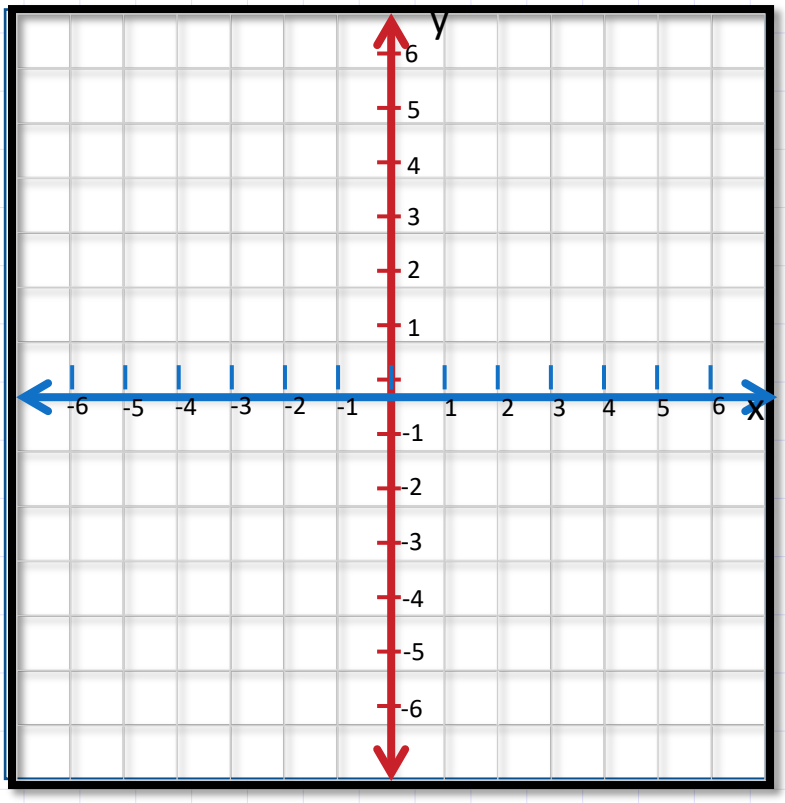


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Success Check # _____

Name:

Date:

Lesson # 60

# Solving Equations with Mixed Numbers

Date

## Warmup

**1.** Solve for x

$25.82 + x = 46.32$

**2.** Solve for p:

$p - 27.3 = 0$

**3.** $\frac{5}{14} + \frac{4}{21}$

**4.** $\frac{7}{12} + \frac{3}{8} =$

## I. Solving Equations with Fractions

$x + \frac{3}{7} = \frac{9}{14}$

$x - \frac{2}{11} = \frac{2}{3}$

**To solve Addition and Subtraction equations with mixed numbers:**
Follow the same rules for solving addition and subtraction equations.

CHECK THE ANSWER!!

To add and subtract mixed numbers first make the denominators the same!

**5.** $\frac{8}{13} = \frac{1}{2} + d$

**6.**

## II. Solving Equations with Mixed Numbers

$x + 1\frac{1}{4} = 3\frac{1}{2}$

$x - 3\frac{4}{5} = 2\frac{1}{6}$

**7.** $s + 2\frac{1}{2} = 4\frac{3}{5}$

**8.**

## IV. Practice

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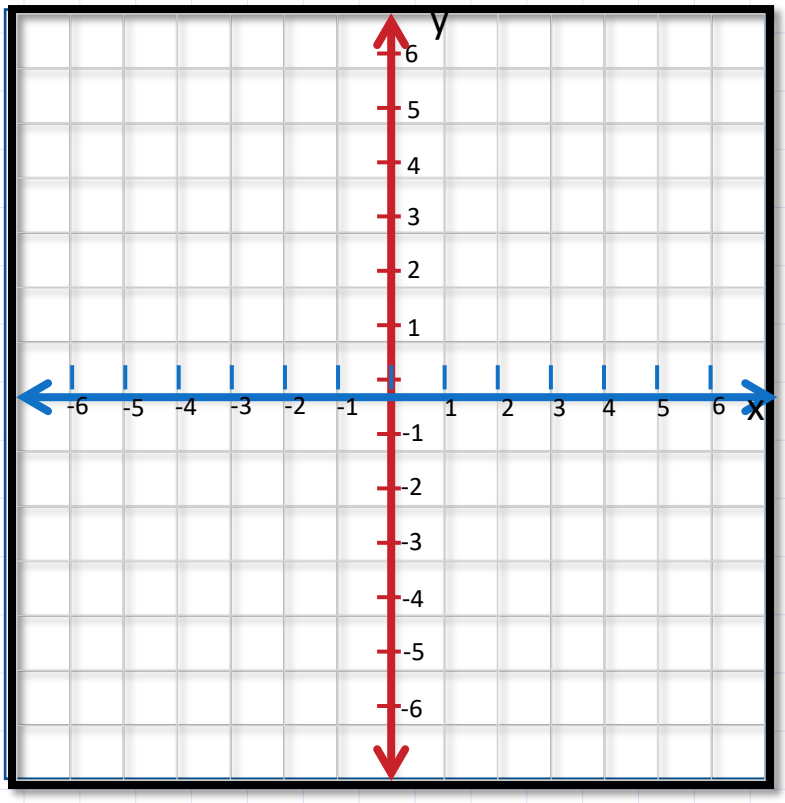


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Success Check # _____

Name:

Date:

Lesson # 61

# Algebraic Expressions with Fractions

Date

## Warmup

**1.** Evaluate the expression if s = 12

$4s + 9$

**2.** Evaluate the expression if y = 20

$5 + 4y$

**3.** Evaluate the expression if a=12, b=5, and c = 1

$ab - 2(13 - 9) + c$

**4.** Evaluate the Expression:

$-8 + -4(10 + 9)$

Parentheses

Exponents

Multiplication or Division

Addition or Subtraction

## I. Expressions with Fractions

Evaluate the expression, if $d=\frac{2}{4}$

$16 + d$

An **Algebraic Expression** is a combination of _____, _____ and at least one _____.

Evaluate the expression if p = 7

$\frac{6p}{3}$

Evaluate the expression:

$8 + 1(7\frac{1}{3} + 7\frac{2}{3})$

**5.** Evaluate the expression if r = $\frac{4}{8}$

$2 - r$

**6.** Evaluate the expression if a = $\frac{2}{6}$, b = $\frac{4}{6}$, and c= $\frac{6}{6}$

$\frac{144a}{6}$

**7.** Evaluate the expression if a = $\frac{4}{9}$, b = 18, and c=5

$ab - 4(11 - 8) + c$

**8.** Evaluate the expression

$2 + -120\left(\frac{3}{6} + \frac{1}{5}\right)$

## IV. Practice

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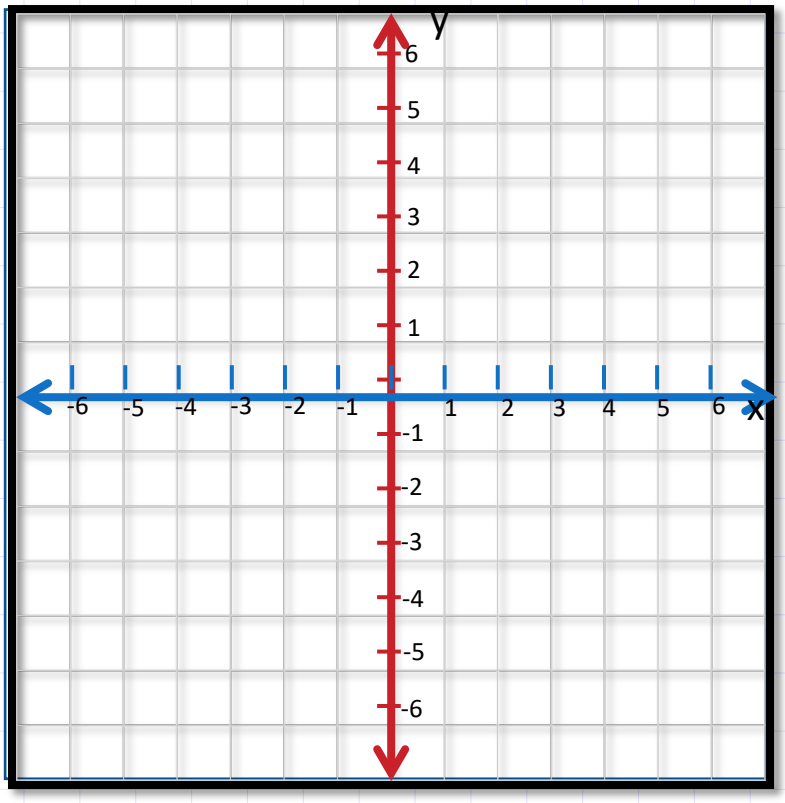


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Success Check # _____

Name:

Date:

Lesson # 62

# Powers and Roots

Date

## Warmup

**1.** Evaluate $1^5$

**2.** Write $7^4$ as a product of the same factor.

**3.** Use exponents to write $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 2$

**4.** Simplify the expression: $4 \cdot 4 \cdot x \cdot x \cdot y \cdot 4 \cdot x \cdot y \cdot x$

**5.** (_____)$^2$ = 16

## I. Exponents

$\text{base}^{\text{exponent}}$

$bbbbb$ = ____

Common factors

**The _____ tells how many times the _____ is used as a factor.**

The _____ is the common factor.

To simplify expressions with exponents:

1. Find the product of numeric factors.
2. Write the variable factors with exponents.

(when possible, write them in alphabetical order)

$4^3$

$\left(\frac{2}{5}\right)^2$

**6.** $7^3$

**7.** $\left(\frac{1}{3}\right)^4$

## II. Variables with Exponents

$2^5 stsrt =$

**10.** $5^2\text{cd} \cdot 5\text{cd}$

$9\text{xxy} \cdot 9\text{yz} =$

**11.** $3^2 aac \cdot 3^2 cc$

## III. Roots

$4^2 = 16$

$\sqrt{16}$ = _____

The inverse operation of raising to a power is called **taking the root**.

$\sqrt{9}$ = _____ What number multiplied by itself is 9?

$\sqrt{64}$ = _____ What number multiplied by itself is 64?

| | | | |
|---|---|---|---|
| $\sqrt{100}$ | $\sqrt[3]{27}$ | 13. $\sqrt{121}$ | 14. $\sqrt[4]{16}$ |

## IV. Simplifying Expressions with Squares and Roots

| | |
|---|---|
| $(4 + 3 \times 1)^2 + 7 =$ | $24 - (3 - 2)^2 \div (5 \cdot 1)$ |
| 16. $-2(2 + 3 + 5) + 8^2 - \sqrt[3]{64} + \frac{8}{-4}$ | 17. $5(8) + 3^3$ |

## IV. Practice

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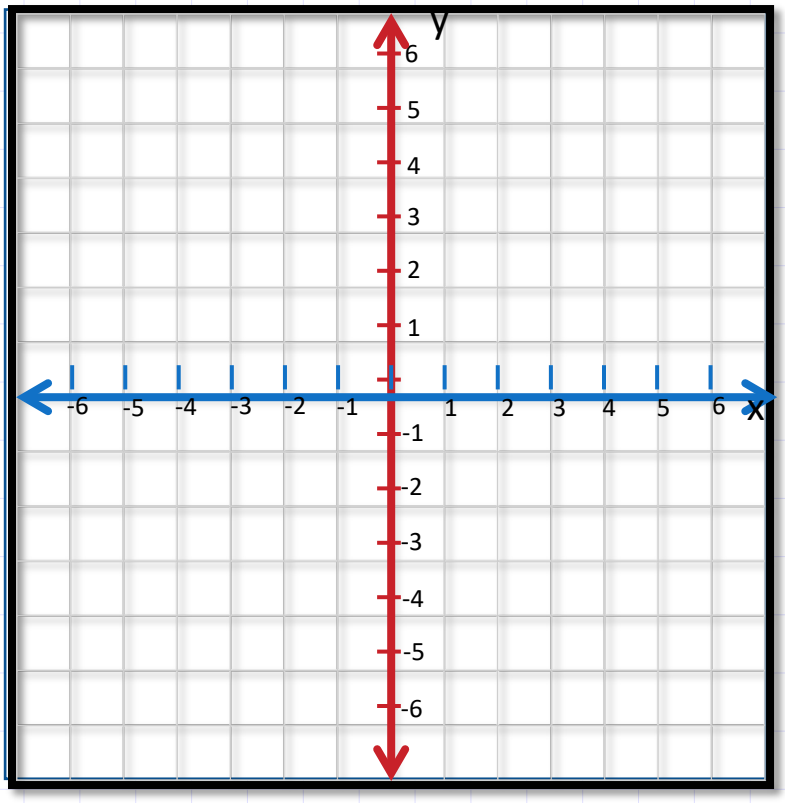


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Success Check # _____

Name:

Date:

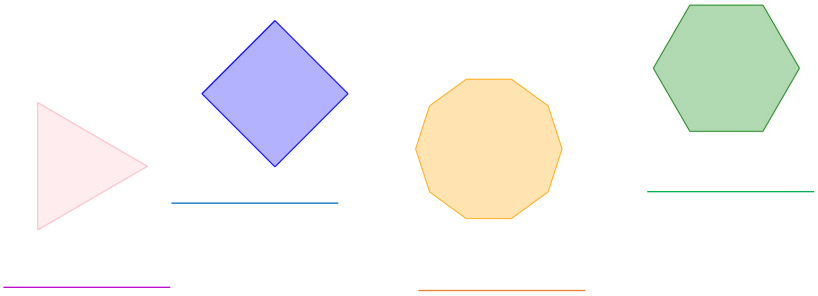
Lesson # 63

# The Quadrilateral Family

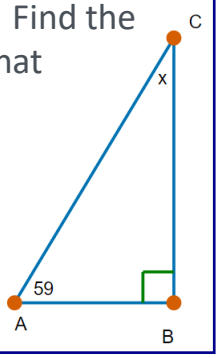
Date

## Warmup

**1.** Identify each polygon



**2.** < ABC is a right angle. Find the measure of <ACB given that <CAB=59º.




**3.** A trapezoid is defined as a _____ with exactly _____ _____ _____ _____ _____.

**4.** What are the properties of a rectangle?

Select one or more:

- ❑ Opposite sides ≅
- ❑ Has 4 right angles
- ❑ All sides are ≅
- ❑ A 4-sided polygon
- ❑ Opposite sides are // (parallel)

**5.** What are the properties of a square?

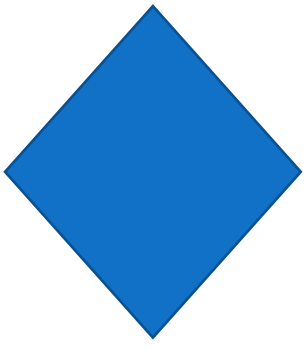
Select one or more:

- ❑ Opposite sides ≅
- ❑ Has 4 right angles
- ❑ All sides are ≅
- ❑ A 4-sided polygon
- ❑ Opposite sides are // (parallel)

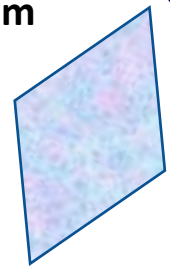
**6.** Select the statements that are true about parallelograms. Select one or more:

- ❑ All the sides are congruent.
- ❑ The opposite sides are parallel.
- ❑ The parallelogram is a 4-sided polygon.
- ❑ The opposite sides are parallel.
- ❑ A parallelogram is not a polygon.
- ❑ All the sides are congruent.

## I. Rhombus

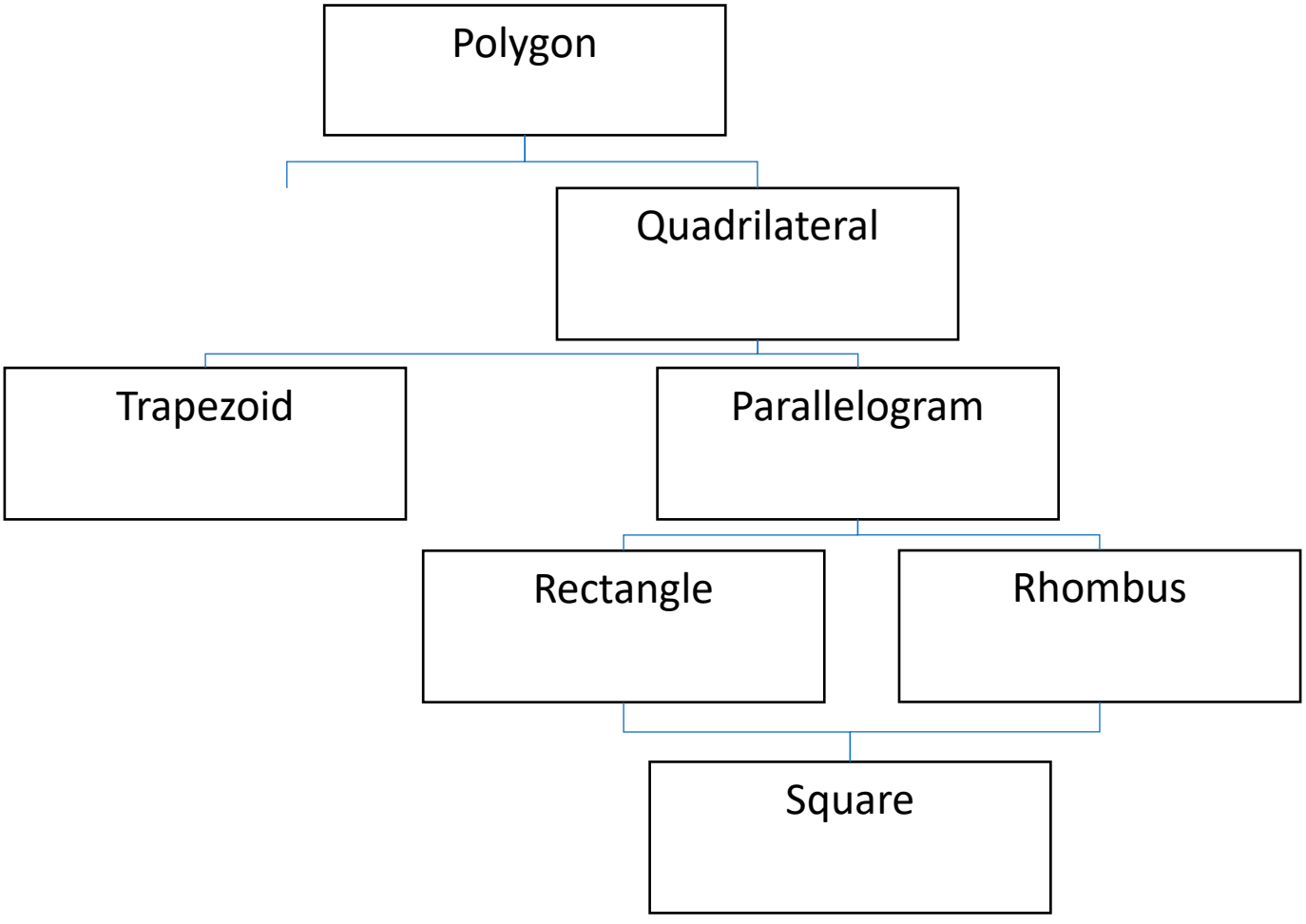


**A rhombus is an equilateral parallelogram**



All 4 sides are congruent
Opposite sides are \\ (parallel)
Opposite angles are congruent
The diagonals are perpendicular bisectors

# II. The Quadrilateral Family

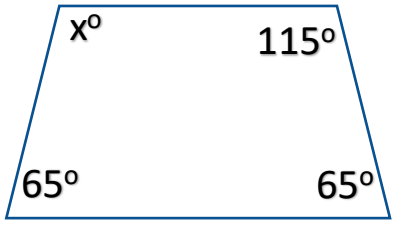



| | Quadrilateral | Parallelogram | Trapezoid | Rectangle | Rhombus | Square |
|---|---|---|---|---|---|---|
| Opposite Sides ≅ | | | | | | |
| Opposite Sides // | | | | | | |
| All sides ≅ | | | | | | |
| All Right angles | | | | | | |
| Opposite Angles ≅ | | | | | | |
| Diagonals ≅ | | | | | | |

## III. Interior angles of a Quadrilateral

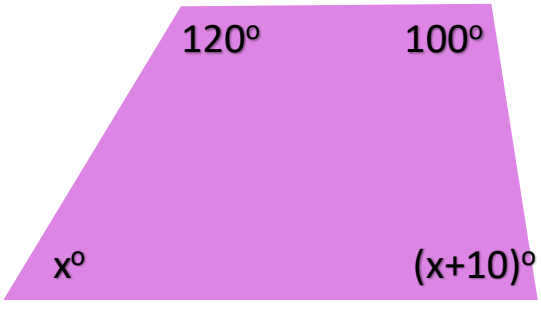
**The Sum of the interior angles of a quadrilateral:** The sum of the interior angles of a quadrilateral is _____°

**Determine the measure of each angle.**




**Determine the measure of each angle.**


**Determine the measure of each angle.**




**13-15**

## IV. Practice

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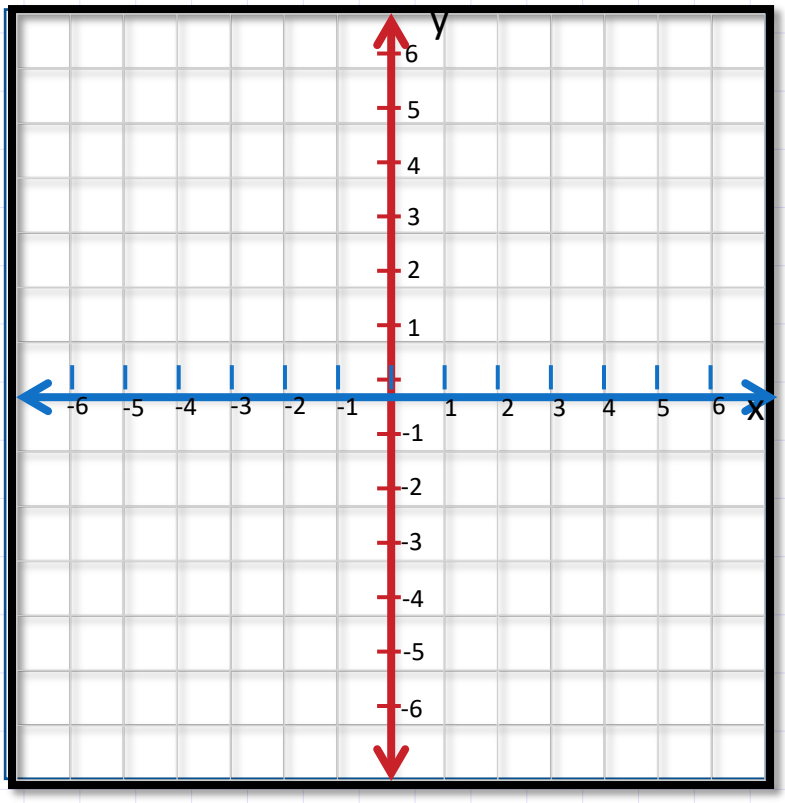


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Success Check # _____

Name:

Date:

Lesson # 64

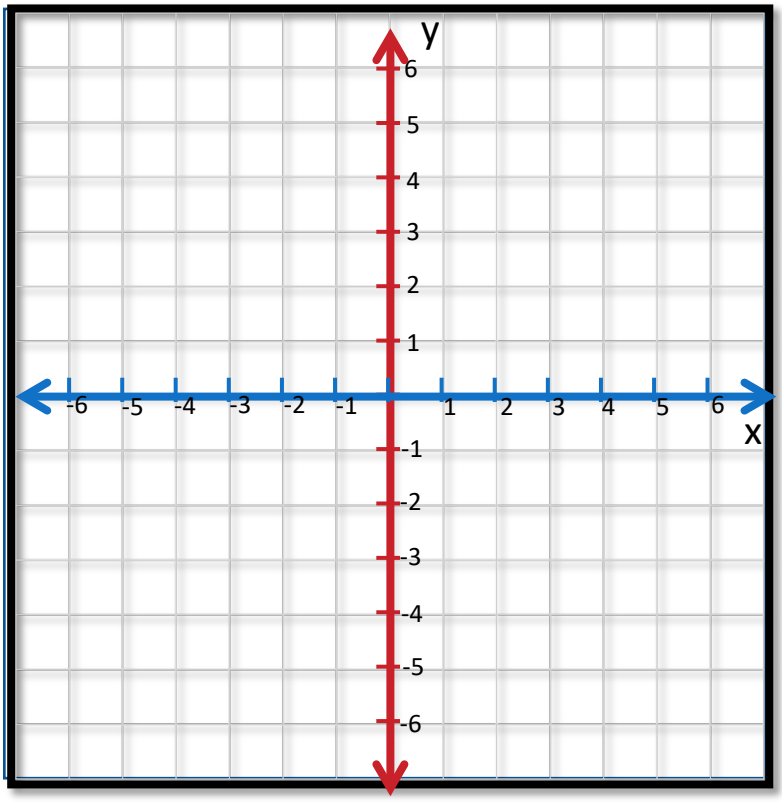
# Reflections on the Coordinate Plane

Date

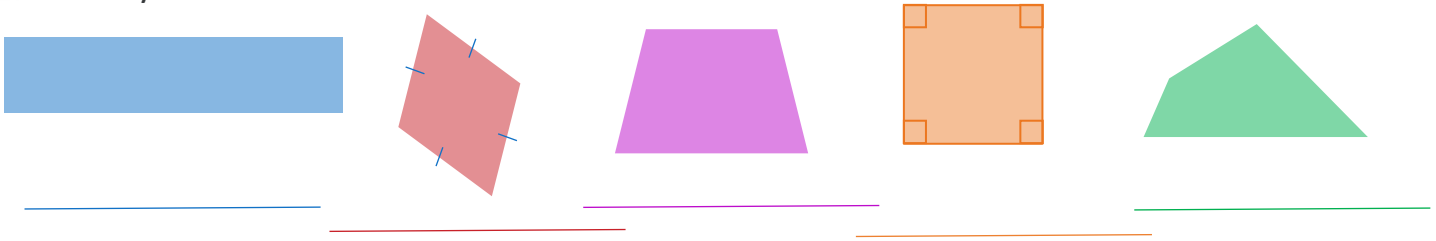
## Warmup

**1.** Graph the equation $y=^{-}3x+2$

| x | Y = -3x+2 | y |
|---|---|---|
| -1 | | |
| 0 | | |
| 1 | | |
| 2 | | |



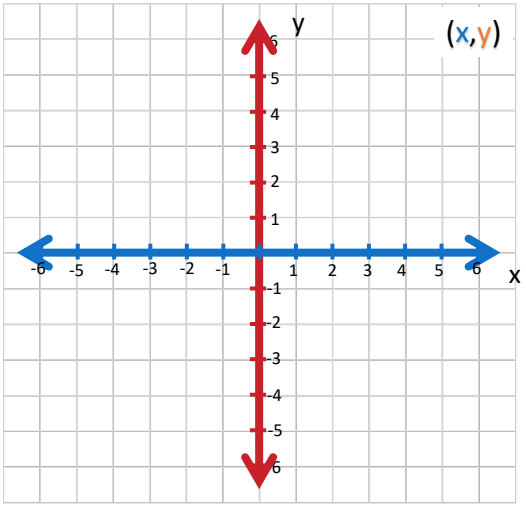

**2.** Identify each Quadrilateral



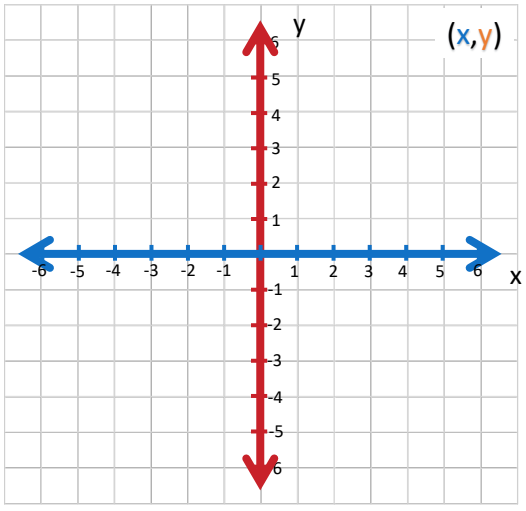
## I. Graphing Shapes

**To graph polygons on the cartesian (coordinate) plane:**

1. Graph and label each point.
   A:(-4,1), B:(-4,4), C:(-5,4), D:(-6,1)
2. Connect the points in the order they were given.

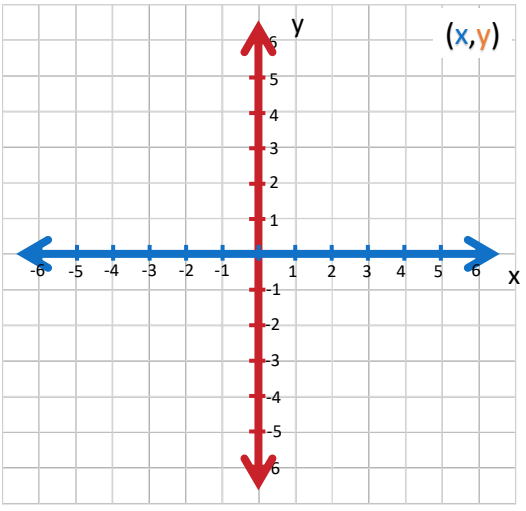


Use the points A:(1,2), B:(0,6), C:(2,6), D:(2,1) to graph a polygon, then identify it.




The shape is a _____.

**3.** Use the points A:(1,-4), B:(2,-6), C:(6,-6), D:(5,-4) to graph a polygon, then identify it.



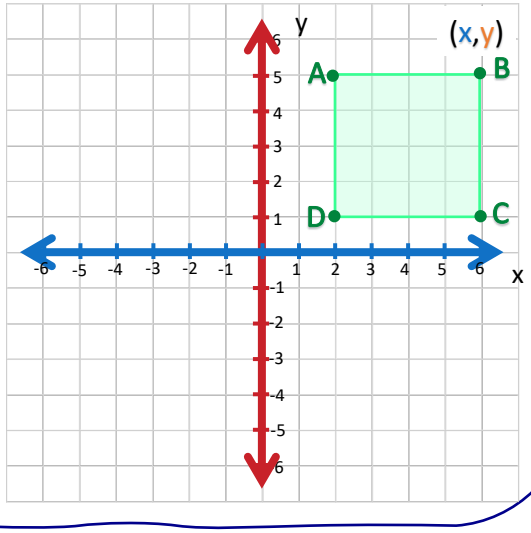

The shape is a _____.

## II. Reflections over the y-axis

**To graph the reflection of a point over the y-axis:**
**Pretend the y-axis (vertical axis) is a mirror.**

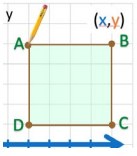
1. Fold the coordinate plane in half such that the y-axis is the fold.

2. Notice where the points reflect to. The x-value of each point is multiplied by -1.



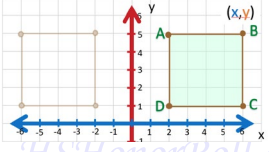

**Hint: if you trace or draw the original shape with a pencil, you can rub the back of the paper when it is folded to determine the reflected point.**

1. Trace the shape and points with a pencil



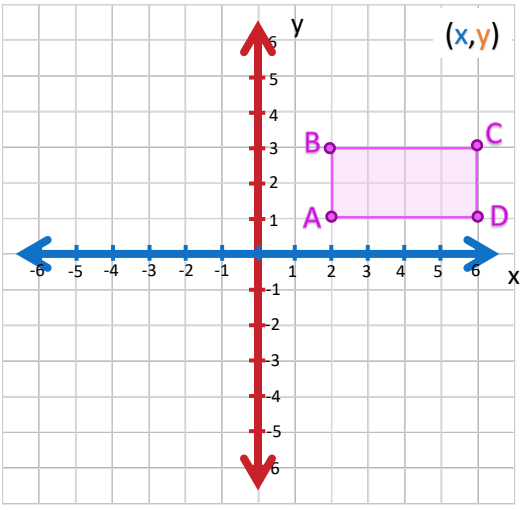

2. Fold the paper in half along the y-axis. Rub your finger on the back of the paper.

3. You can now see the reflected points.



**4.** Plot the reflection of the quadrilateral over the y-axis.

The shape is a _____.

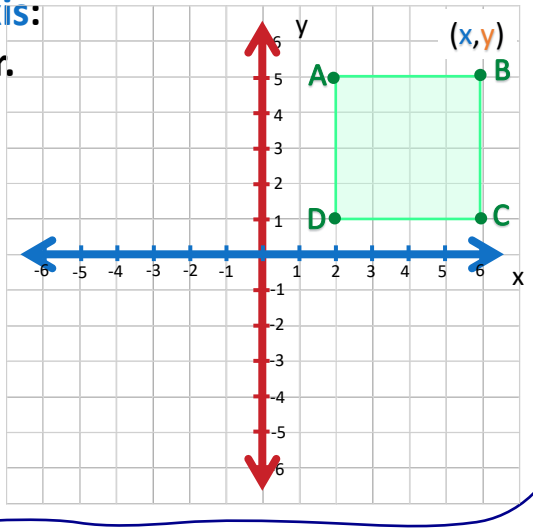



## III. Reflections over the x-axis

**To graph the reflection of a point over the x-axis:**
**Pretend the x-axis (horizontal axis) is a mirror.**

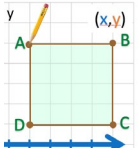
1. Fold the coordinate plane in half such that the x-axis is the fold.

2. Notice where the points reflect to. The y-value of each point is multiplied by -1.



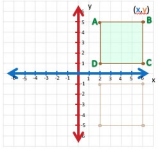

**Hint: if you trace or draw the original shape with a pencil, you can rub the back of the paper when it is folded to determine the reflected point.**

1. Trace the shape and points with a pencil



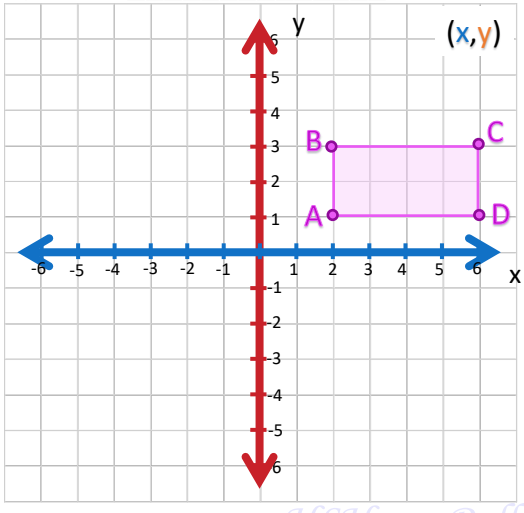

2. Fold the paper in half along the x-axis. Rub your finger on the back of the paper.

3. You can now see the reflected points.

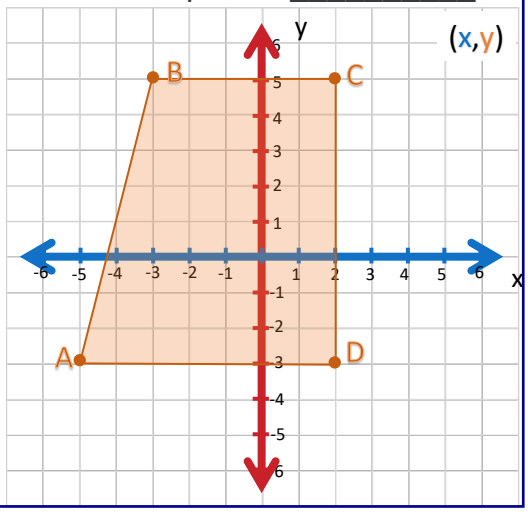


**5.** Plot the reflection of the quadrilateral over the x-axis.

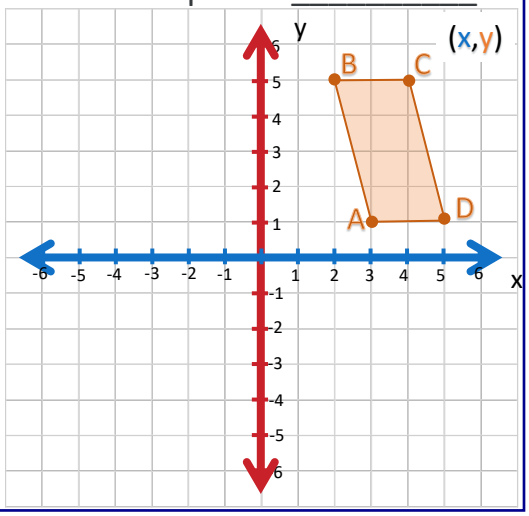
The shape is a _____.



**6.** Plot the reflection of the quadrilateral over the **x-axis**. The shape is a _____.




**7.** Plot the reflection of the quadrilateral over the **y-axis**. The shape is a _____.




## IV. Practice

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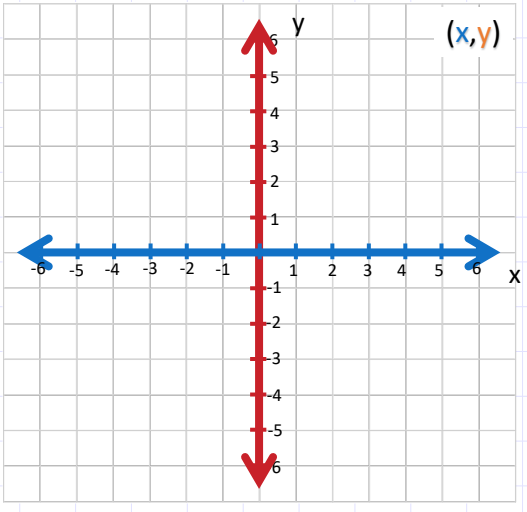


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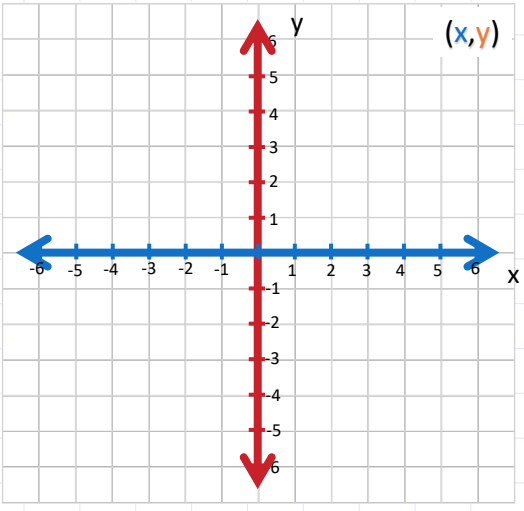


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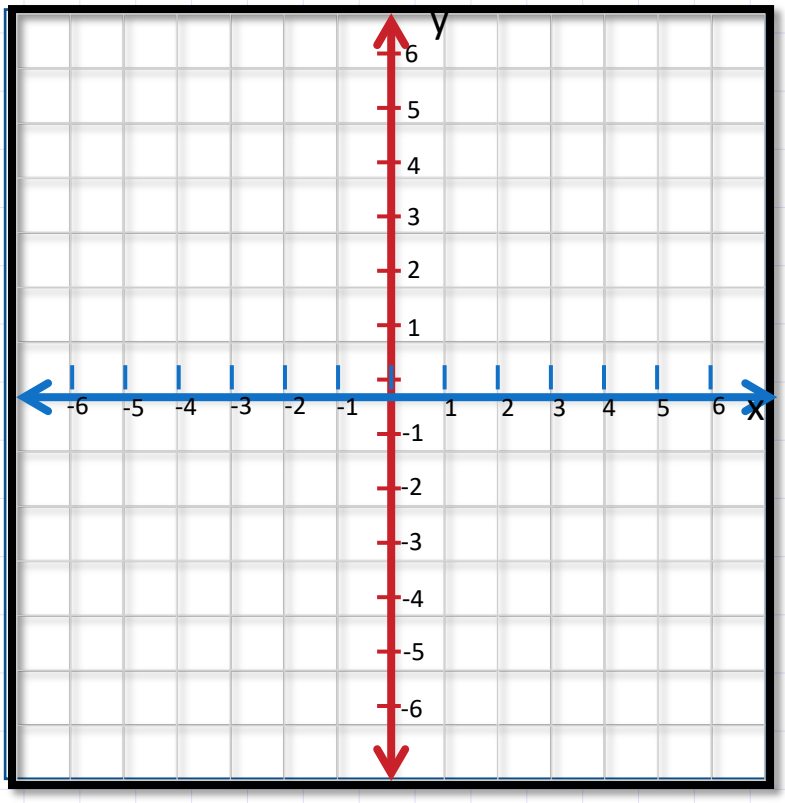


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Success Check # _____

Name:

Date:

Review for Module #_____ Answer Sheet

Name:

Attempt #:

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| 7 | 8 |
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| 15 | 16 |
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| 19 | 20 |
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Name: Attempt #: Test #___ Answer Sheet

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