

## EXERCISES

Solve each system by graphing. When possible, write the solution as an ordered pair.

1)

$$y = -3$$

$$y = -x - 4$$

4)

$$2x + 3y = -6$$

$$2x + y = 2$$

7)

$$-y + 7x = 4$$

$$-y - 3 + 7x = 0$$

10)

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

$$y = \frac{1}{2}x + 1$$

13)

$$-2y + x = 4$$

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

2)

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

$$y = -\frac{5}{3}x - 4$$

5)

$$2x + y = -2$$

$$x + 3y = 9$$

8)

$$y = -\frac{5}{4}x - 2$$

$$y = -\frac{1}{4}x + 2$$

11)

$$6x + y = -3$$

$$x + y = 2$$

14)

$$16 = -x - 4y$$

$$-2x = -4 - 4y$$

3)

$$x + 3y = -9$$

$$5x + 3y = 3$$

6)

$$2x - y = -1$$

$$0 = -2x - y - 3$$

9)

$$y = 2x + 2$$

$$y = -x - 4$$

12)

$$x + 2y = 6$$

$$5x - 4y = 16$$

15)

$$-5x + 1 = -y$$

$$-y + x = -3$$

## EXERCISES

Solve each system by substitution. Determine if each system is consistent, independent or dependent, or inconsistent.

1)

$$y = -2x - 9$$

$$y = 2x - 1$$

4)

$$y = -5$$

$$3x + 4y = -17$$

7)

$$-6x + y = 20$$

$$-3x - 3y = -18$$

10)

$$y = 7x - 24$$

$$y = -3x + 16$$

13)

$$x - 2y = -13$$

$$4x + 2y = 18$$

16)

$$x + 5y = 15$$

$$-3x + 2y = 6$$

2)

$$y = 3x + 2$$

$$y = -3x + 8$$

5)

$$y = -8x + 19$$

$$-x + 6y = 16$$

8)

$$y = x + 5$$

$$y = -2x - 4$$

11)

$$6x - 4y = -8$$

$$y = -6x + 2$$

14)

$$6x + 4y = 16$$

$$-2x + y = -3$$

17)

$$-6x + 6y = -12$$

$$8x - 3y = 16$$

3)

$$y = 6x - 6$$

$$-3x - 3y = -24$$

6)

$$x - 5y = 7$$

$$2x + 7y = -20$$

9)

$$y = 3x + 13$$

$$y = -2x - 22$$

12)

$$y = x + 4$$

$$3x - 4y = -19$$

15)

$$-5x - 5y = -20$$

$$-2x + y = 7$$

18)

$$2x + y = -7$$

$$5x + 3y = -21$$

## EXERCISES

Solve each system by *Elimination*

1)

$$-9x + 5y = -22$$

$$9x - 5y = 13$$

4)

$$2x + 4y = 24$$

$$4x - 12y = 8$$

7)

$$-7x + 5y = -8$$

$$-3x - 3y = 12$$

10)

$$5x - 5y = -15$$

$$5x - 5y = -15$$

13)

$$-6x + 4y = 4$$

$$-3x - y = 26$$

16)

$$-7x + 10y = 13$$

$$4x + 9y = 22$$

2)

$$4x - 6y = -10$$

$$4x - 6y = -14$$

5)

$$5x + 10y = 20$$

$$-6x - 5y = -3$$

8)

$$9y = 7 - x$$

$$-18y + 4x = -26$$

11)

$$-10x - 5y = 0$$

$$-10x - 10y = -30$$

14)

$$-5x + 4y = 4$$

$$-7x - 10y = -10$$

17)

$$-6 - 42y = -12x$$

$$x - \frac{1}{2} - \frac{7}{2}y = 0$$

3)

$$2x - y = 5$$

$$5x + 2y = -28$$

6)

$$9x - 2y = -18$$

$$5x - 7y = -10$$

9)

$$-7x + y = -10$$

$$-9x - y = -22$$

12)

$$x + 3y = -1$$

$$10x + 6y = -10$$

15)

$$-4x - 5y = 12$$

$$-10x + 6y = 30$$

Name: \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

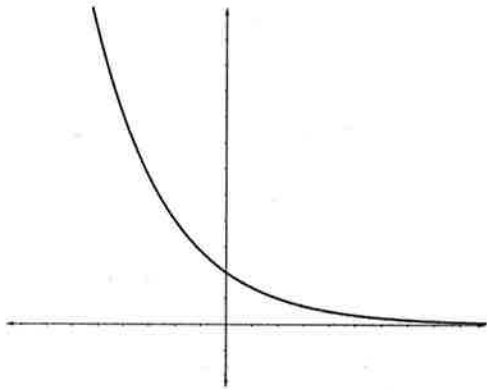
### Integrated 1

1. Complete the table below and write the corresponding equation.

x	y
0	
1	
2	196
3	1,372
4	9,604

Equation \_\_\_\_\_

2. Given the exponential graph below, what do you know about the multiplier,  $b$ , of the exponential function?



The multiplier \_\_\_\_\_

Could the  $y$  intercept be negative? Explain

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Graph  $y = 2(3)^x$ , name the type of graph, and state the domain, range,  $x$ - and  $y$ -intercepts, and equation of the asymptote.

Type of graph: \_\_\_\_\_

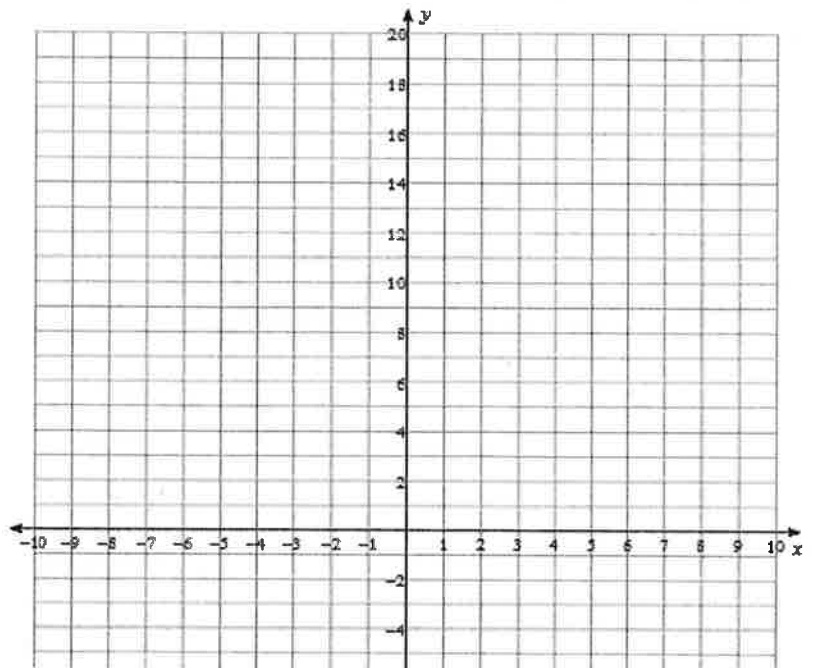
Domain: \_\_\_\_\_

Range: \_\_\_\_\_

$x$ -intercepts: \_\_\_\_\_

$y$ -intercepts: \_\_\_\_\_

equation of asymptote: \_\_\_\_\_



4. A radioactive isotope is decaying at a rate of 24% per hour. Currently there are 175 grams of the substance.

a. Write an equation that represents the number of grams present after  $n$  hours.

\_\_\_\_\_

b. How much will be left one day from now?

\_\_\_\_\_

5. Solve each system using any method.

a. 
$$\begin{aligned} -4x + 4y &= 20 \\ 7x - 12y &= -25 \end{aligned}$$

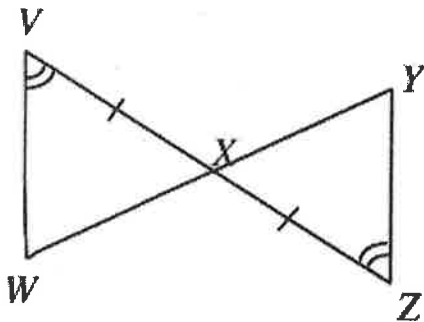
b. 
$$\begin{aligned} -5x - 3y &= 23 \\ x &= y - 3 \end{aligned}$$

Answers:

a. \_\_\_\_\_

b. \_\_\_\_\_

6. Given the figure below, prove that  $\triangle WXV \cong \triangle YXZ$ . Record your reasoning in a flowchart.

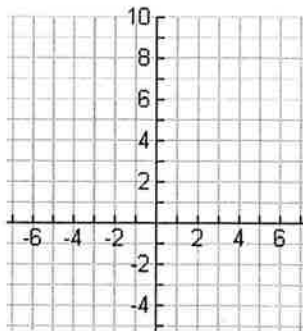
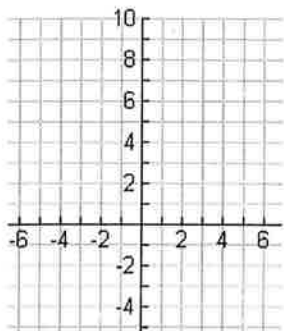


# Quadrilaterals in the Coordinate Plane

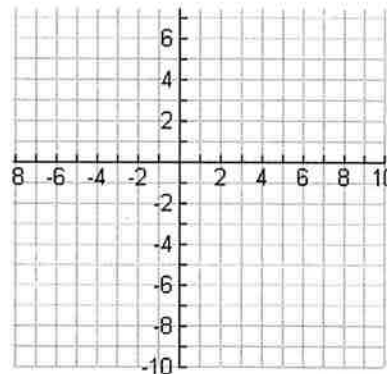
1 – 2: Show that the quadrilateral with the given vertices is a parallelogram.

1.  $A(-3, 2)$ ,  $B(-2, 7)$ ,  $C(2, 4)$ , and  $D(1, -1)$

2.  $J(-1, 0)$ ,  $K(-3, 7)$ ,  $L(2, 6)$ , and  $M(4, -1)$



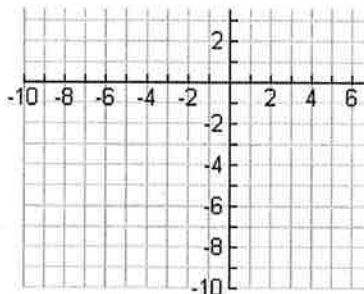
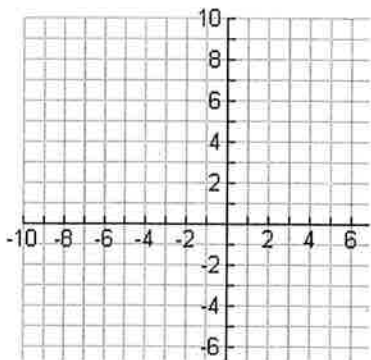
3. The vertices of square  $PQRS$  are  $P(-4, 0)$ ,  $Q(4, 3)$ ,  $R(7, -5)$ , and  $S(-1, -8)$ . Show that the diagonals of square  $PQRS$  are congruent perpendicular bisectors of each other.



4 – 5: Use the diagonals to determine whether a parallelogram with the given vertices is a rectangle, rhombus, or square. Give all names that apply.

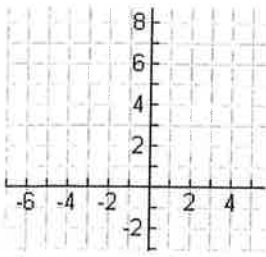
4.  $A(-10, 4)$ ,  $B(-2, 10)$ ,  $C(4, 2)$ , and  $D(-4, -4)$

5.  $J(-9, -7)$ ,  $K(-4, -2)$ ,  $L(3, -3)$ , and  $M(-2, -8)$

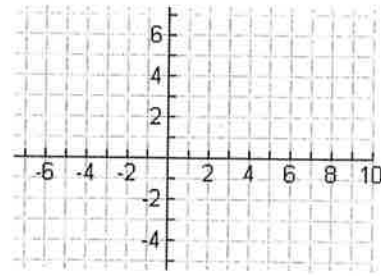


6 – 8: Give the best name for a quadrilateral with the given vertices.

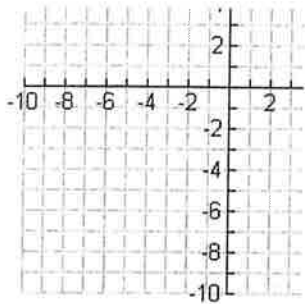
6.  $(-4, -1), (-4, 6), (2, 6), (2, -4)$



7.  $(-4, -3), (0, 3), (4, 3), (8, -3)$



8.  $(-8, -4), (-5, 1), (1, -5),$  and  $(-2, -10)$



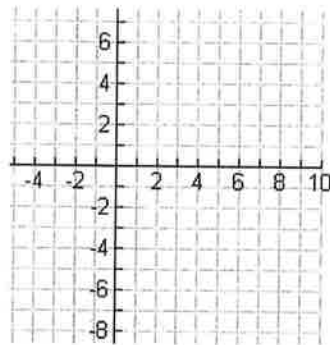
9. Which of the following is the best name for figure  $WXYZ$  with vertices  $W(-3, 1), X(1, 5), Y(8, -2),$  and  $Z(4, -6)$ ?

(a) Parallelogram

(b) Rectangle

(c) Rhombus

(d) Square



10. Four lines are represented by the equations below:

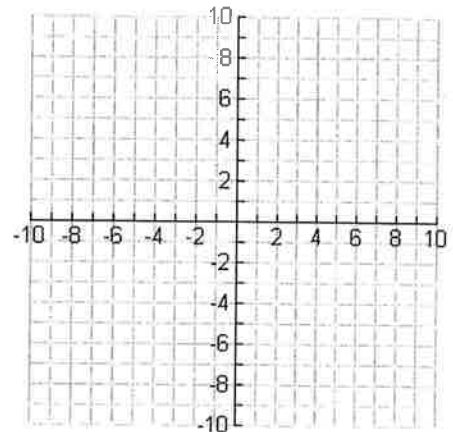
$$l: y = -x + 1$$

$$m: y = -x + 7$$

$$n: y = 2x + 1$$

$$p: y = 2x + 7$$

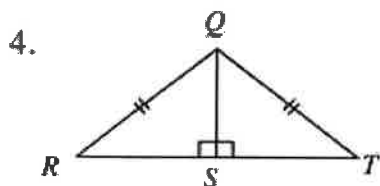
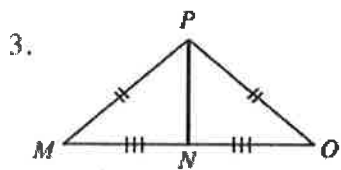
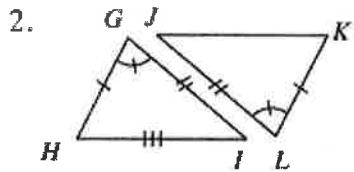
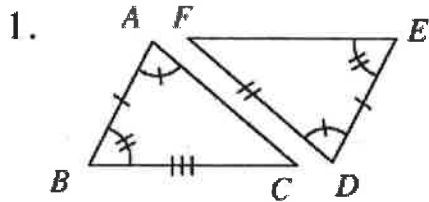
- Graph the four lines in the coordinate plane.
- Classify the quadrilateral formed by the lines.
- Suppose the slopes of lines  $n$  and  $p$  change to 1. Reclassify the quadrilateral.



### Problems

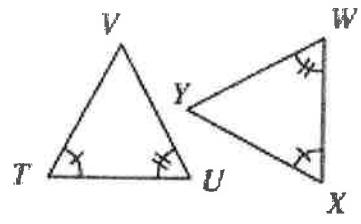
Briefly explain if each of the following pairs of triangles are congruent or not. If so, state the triangle congruence condition that supports your conclusion.

Create either a flowchart to the right or a two column chart on the right.

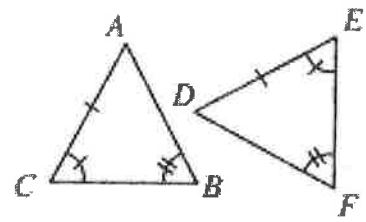




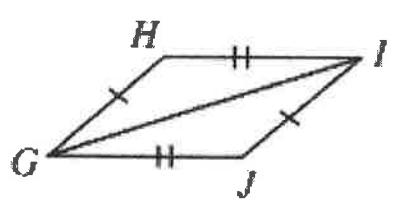
5.



6.



7.



8.

