

## Fall 2016--BM1--Study Guide Be sure to review all previous test, quizzes and assignments!! \_\_\_\_\_

**Solve each equation.**

1)  $-15 + 8x - 5x = 2x + 6x$

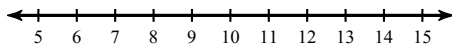
2)  $-5 + x = x - 5$

3)  $-5(5n - 3) = 15 + 5n$

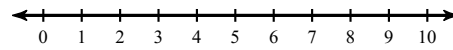
4)  $4x + 29 = -3(8x + 2) + 7$

**Solve each inequality and graph its solution.**

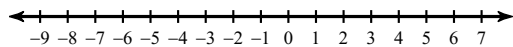
5)  $-4(8 + 6n) < -224$



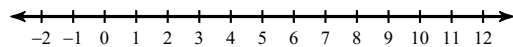
6)  $-8(3x - 7) > -88$

**Solve each compound inequality and graph its solution.**

7)  $6 - 2n > 14$  or  $4n - 5 \geq 7$



8)  $6 \leq 10n + 6 < 96$

**Solve each proportion.**

9)  $\frac{v}{6} = \frac{5}{9}$

10)  $\frac{p-1}{8} = \frac{3}{4}$

11) A rectangle has a length of  $x + 2$  inches and a width of 5 inches. For what values of  $x$  is the area of the rectangle greater than the perimeter of the rectangle? Draw a diagram to help.

12) A model airplane flies 18 feet in 2 seconds. What is the airplane's speed in miles per hour? Round your answer to the nearest hundredth.

13) Solve  $F = \frac{9}{5}C + 32$  for  $C$ .

14) Solve  $P = 2L + 2w$  for  $L$ .

15) A triangle has side lengths of 5 inches, 10 inches, and 15 inches. Every dimension is multiplied by  $\frac{1}{5}$  to form a new triangle.

16) A contractor has a blueprint for a house drawn to the scale 1 in : 3 ft. A wall on the blueprint is 6.5 inches long. How long is the actual wall?

What is the scale factor? \_\_\_\_\_

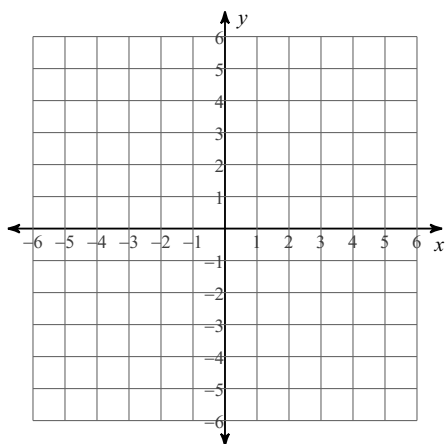
What is the ratio of the corresponding sides of the first figure to the second figure?  
\_\_\_\_\_

What is the ratio of the perimeters? \_\_\_\_\_

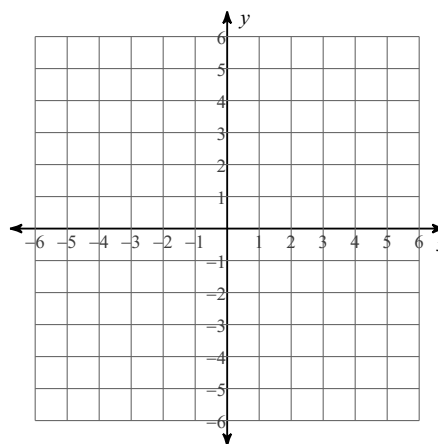
What is the ratio of the areas? \_\_\_\_\_

**Sketch the graph of each line.**

17)  $7x + 5y = 10$



18)  $4x - y = -3$



**Find the slope of the line through each pair of points.**

19)  $(-12, 13), (-12, 5)$

20)  $(-16, 5), (-1, 11)$

**Write the slope-intercept form of the equation of the line through the given point with the given slope.**

21) through:  $(-2, 2)$ , slope =  $-\frac{1}{2}$

**Write the slope-intercept form of the equation of the line through the given points.**

22) through:  $(3, -2)$  and  $(4, 2)$

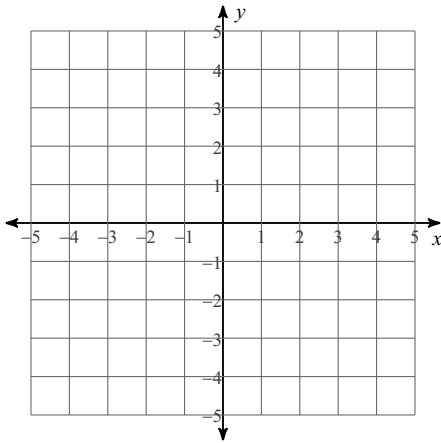
**Write the slope-intercept form of the equation of the line described.**

23) through:  $(1, -3)$ , parallel to  $y = -5$

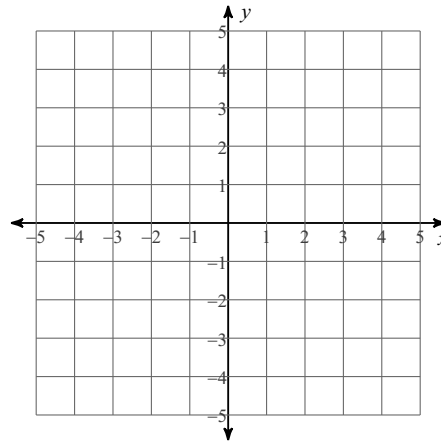
24) through:  $(3, -1)$ , perp. to  $y = x + 2$

**Solve each system by graphing.**

25)  $y = 5x - 2$   
 $y = x + 2$



26)  $x + 4y = -8$   
 $x + 4y = 16$



**Solve each system by substitution.**

27)  $y = 4x + 19$   
 $-6x - 2y = 4$

28)  $2x - 3y = 9$   
 $y = 1$

**Solve each system by elimination.**

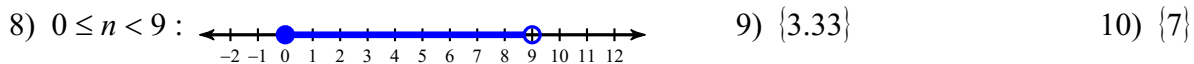
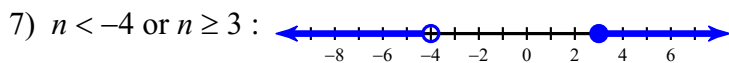
29)  $12x - 9y = 0$   
 $-4x + 3y = 0$

30)  $-7x - 6y = 24$   
 $6x + 5y = -21$

31) Mary's school is selling tickets to the annual talent show. On the first day of ticket sales the school sold 12 senior citizen tickets and 1 child ticket for a total of \$42. The school took in \$96 on the second day by selling 6 senior citizen tickets and 13 child tickets. What is the price each of one senior citizen ticket and one child ticket?

## Answers to Fall 2016--BM1--Study Guide

1)  $\{-3\}$                       2)  $\{\text{All real numbers.}\}$                       3)  $\{0\}$                       4)  $\{-1\}$



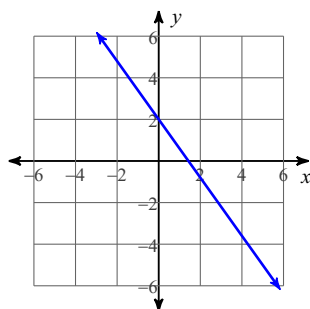
11)  $x > \frac{4}{3}$                       12) 6.14 mi/h                      13)  $C = \frac{5}{9}(F - 32)$                       14)  $L = \frac{P - 2w}{2}$

15) Scale Factor =  $\frac{1}{5}$ , Ratio of Corresponding sides  $\frac{5}{1}$ , Ratio of perimeters  $\frac{5}{1}$ , Ratio of Areas

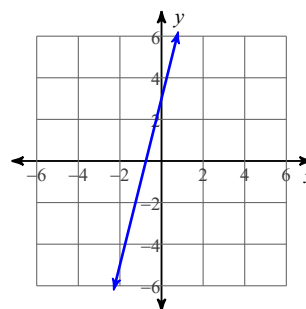
$$\frac{25}{1}$$

16) 19.5 ft

17)



18)



19) Undefined

20)  $\frac{2}{5}$

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

22)  $y = 4x - 14$

23)  $y = -3$

24)  $y = -x + 2$

25)  $(1, 3)$

26) No solution

27)  $(-3, 7)$

28)  $(6, 1)$

29) Infinite number of solutions

30)  $(-6, 3)$

31) senior citizen ticket: \$3, child ticket: \$6