

Benchmark 1--Study Guide

Period _____

Fall 2015 _____

Solve each equation.

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

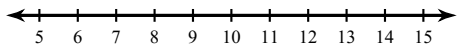
2) $-5 + x = x - 5$

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

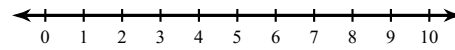
4) $4x + 29 = -3(8x + 2) + 7$

Solve each inequality and graph its solution.

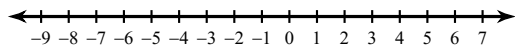
5) $-4(8 + 6n) < -224$



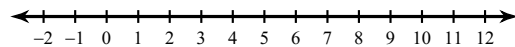
6) $-8(3x - 7) > -88$

**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) Sarah is comparing five different scales using a standard mass that is exactly 10 grams. Her results are below:

- Scale 1 : 9.98 g
- Scale 2 : 9.9 g
- Scale 3 : 10.1 g
- Scale 4 : 10.3 g
- Scale 5 : 9.8 g

Which scale is the most precise? _____

Which scale is the most accurate? _____

16) 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.

What is the scale factor? _____

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

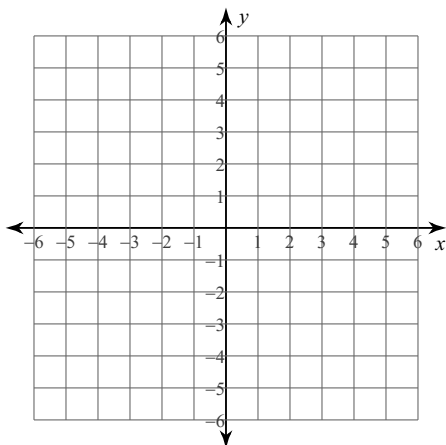
What is the ratio of the perimeters? _____

What is the ratio of the areas? _____

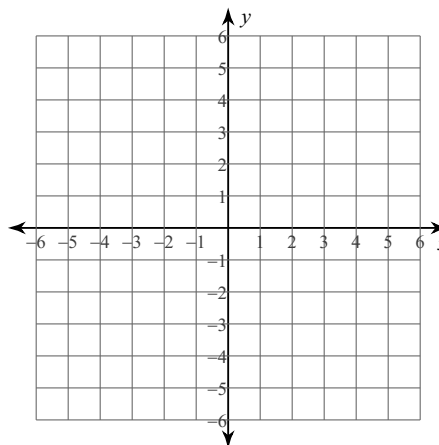
17) A contractor has a blueprint for a house drawn to the scale 1 in : 3 ft. A wall on the blueprint is 6.5 inches long. How long is the actual wall?

Sketch the graph of each line.

18) $7x + 5y = 10$



19) $4x - y = -3$



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

20) $(-12, 13), (-12, 5)$

21) $(-16, 5), (-1, 11)$

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

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

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

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

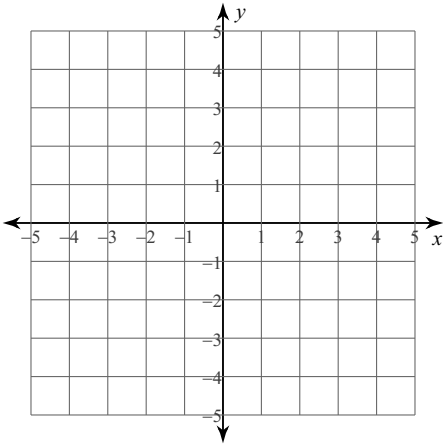
Write the slope-intercept form of the equation of the line described.

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

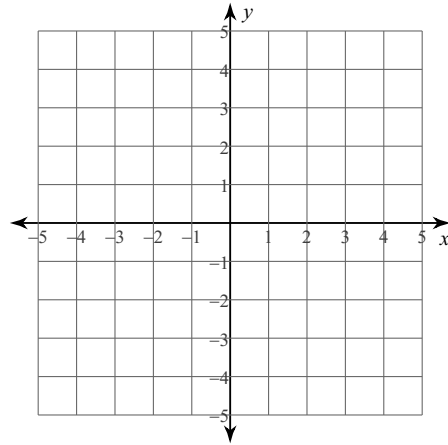
25) through: $(3, -1)$, perp. to $y = x + 2$

Solve each system by graphing.

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



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



Solve each system by substitution.

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

29) $2x - 3y = 9$
 $y = 1$

Solve each system by elimination.

30) $12x - 9y = 0$
 $-4x + 3y = 0$

31) $-7x - 6y = 24$
 $6x + 5y = -21$

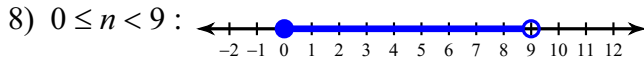
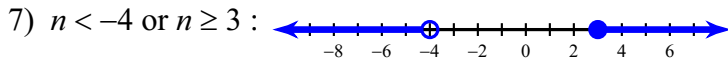
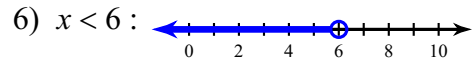
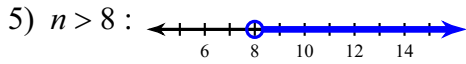
Answers to Benchmark 1--Study Guide

1) $\{-3\}$

2) $\{\text{All real numbers.}\}$

3) $\{0\}$

4) $\{-1\}$



9) $\{3.33\}$

10) $\{7\}$

11) $x > \frac{4}{3}$

12) 6.14 mi/h

13) $C = \frac{5}{9}(F - 32)$

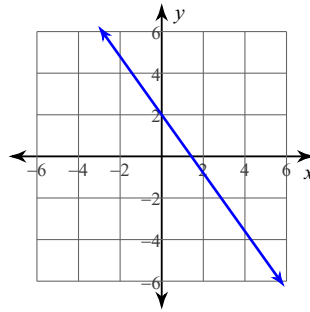
14) $L = \frac{P - 2w}{2}$

15) Scale 1, Scale 1

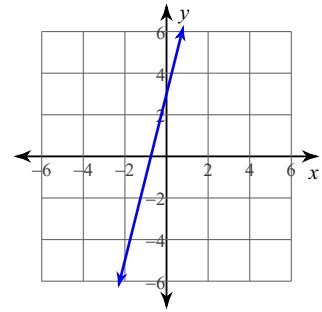
16) The dot next to the choice indicates that it is the answer.

17) 19.5 ft

18)



19)



20) Undefined

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

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

23) $y = 4x - 14$

24) $y = -3$

25) $y = -x + 2$

26) $(1, 3)$

27) No solution

28) $(-3, 7)$

29) $(6, 1)$

30) Infinite number of solutions

31) $(-6, 3)$