Trimester 2 Practice Benchmark #2

The benchmark covers chapters 4 (linear equations), chapter 5 (systems of equations) and chapter 7 (square roots and Pythagorean Theorem). This worksheet reviews Chapters 4, 5 and 7.

Rewrite each equation in slope-intercept form (solve for y)

1) $y - 3x = 1$
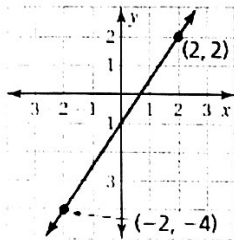
$y = 3x + 1$

2) $2x - 3y = 6$

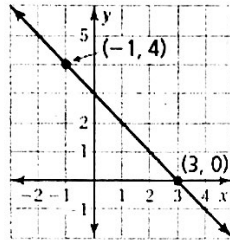$y = \frac{2}{3}x - 2$

3) $5x + 3y = -9$

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

For #4-6, find the slope given the graph.
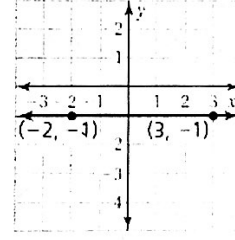
4)

$(2,2)$
$(-2,-4)$

$\frac{3}{2}$

5)

$(-1, 4)$
$(3, 0)$

-1

6)

$(-2, -1)$ $(3, -1)$

0

For #7-10, find the slope given a pair of points.

7) (5, 7) and (-1, 10)

$-\frac{1}{2}$

8) (4, 1) and (2, -3)

2

9) (-3, 5) and (3, -1)

-1

For #10-11, find the slope given a table.

10)

x	0	2	4	6
y	-4	-1	2	5

$\frac{3}{2}$

11)

x	-4	-1	0	3
y	7	4	3	0

-1

12) Write an equation for problem #10

$y = \frac{3}{2}x - 4$

13) Write an equation for problem #11

$y = -x + 3$

14) Two lines are ___parallel___ if they never intersect or cross.
They have the same ___slope___ but different ___y-intercept___.

15) Identify the slope and y-intercept of each equation.
  a) $y = -3x + 5$

  $m = -3$
  $b = 5$

  b) $x - 2y = 4$

  $m = \frac{1}{2}$
  $b = -2$

16) Evaluate.

   a) $\sqrt{49}$ b) $3\sqrt{16}+2$ c) $\pm\sqrt{81}$

        7   14 ±9

17) The value of $\sqrt{19}$ is between what two integers?   4 & 5

18) The area of a square is $100cm^2$. What is the length of one side?   10cm

19) The volume of a cube is $27in^3$. What is the length of one side?   3 in
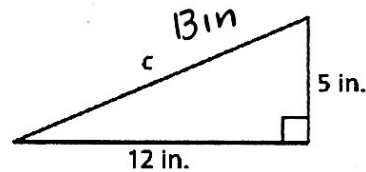
20) Evaluate $\sqrt[3]{8}$ 2

21) The Pythagorean Theorem applies to __right__ triangles only. It states that each $a^2+b^2=c^2$ where a and b are the legs and c is the __hypotenuse__.

For #22-24, use the Pythagorean Theorem to solve for the missing side.

22)
6 cm   c   10cm   8 cm

23)
13in   c   5 in.   12 in.
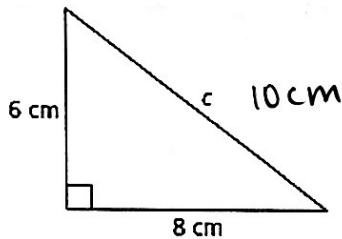
24) A television has a height of 10 inches, and a width of 24 inches. What is the length of the diagonal on the TV? Hint: Draw a picture and label it first.

$$diagonal = 26 \text{ in}$$

For #25-27, solve the system using any method of your choice.

25)   26)   27)

28) When solving a system of equations results in a false statement, that means there are __0__ solutions to the system, and when graphed, the lines would be __parallel__.

29) When solving a system of equations results in a true statement (identity), that means there are __infinite__ solutions, and when graphed, the lines would be __the same line__.

30) Circle all the correct references/formulas/definitions of slope:

   $\left(\dfrac{rise}{run}\right)$ $\dfrac{run}{rise}$ $\dfrac{change\ in\ x}{change\ of\ y}$ $\left(\dfrac{y_2-y_1}{x_2-x_1}\right)$ "b" $\left(\dfrac{change\ of\ y}{change\ of\ x}\right)$ $\left("m"\right)$