

Name _____

Course 3: Ch3 Test Review

Proportional Relationships and Slope

Directions: When working each of the following questions, be sure to show all work. Be sure to round any decimals to the nearest hundredth.

- 1) Determine the constant rate of change between x and y in the table.

- a) \$3.80 per bottle
- b) \$3.80 per two bottles
- c) \$1.90 per bottle
- d) \$1.90 per two bottles

| | | | |
|--------------|------|------|-------|
| # of bottles | 2 | 4 | 6 |
| cost (\$) | 3.80 | 7.60 | 11.40 |

- 2) Determine the constant rate of change between x and y in the table.

- a) \$10 per hour
- b) \$18 per two hours
- c) \$8 per hour
- d) \$8 per two hours

| time (hours) | charge (\$) |
|--------------|-------------|
| 1 | 10 |
| 2 | 18 |
| 3 | 26 |
| 4 | 34 |

- 3) Determine the constant rate of change between x and y in the table.

- a) -8 gallons per hour
- b) -16 gallons per hour
- c) 134 gallons per hour
- d) 134 gallons per two hours

| time (hours) | H_2O (gallons) |
|--------------|------------------|
| 2 | 134 |
| 4 | 118 |
| 6 | 102 |
| 8 | 86 |

4) Find the slope of the line that passes through $(1, 1)$ and $(-3, -5)$.

- a) $-\frac{3}{2}$
- b) $-\frac{2}{3}$
- c) $\frac{2}{3}$
- d) $\frac{3}{2}$

5) Find the slope of the line that passes through $(4, -2)$ and $(2, 4)$.

- a) -3
- b) -1
- c) 1
- d) 3

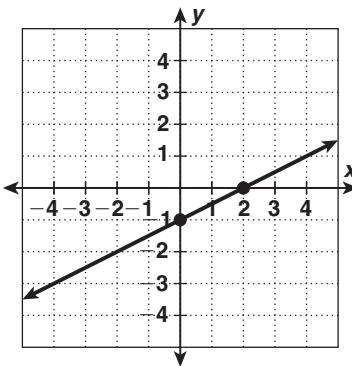
6) What is the slope of the line passing through $(-3, -1)$ and $(2, 1)$?

- a) $-\frac{5}{2}$
- b) $-\frac{2}{5}$
- c) $\frac{2}{5}$
- d) $\frac{5}{2}$

7) Find the equation for the linear function.

(hint: $y = mx + b$)

- a) $y = \frac{1}{2}x - 1$
- b) $y = -\frac{1}{2}x - \frac{1}{2}$
- c) $y = \frac{1}{2}x + 1$
- d) $y = 2x - 1$



8) What are the slope and y -intercept for the graph of $y + 4x = -7$?
(hint: $y = mx + b$)

- a) $m = 4; y - \text{int} = 7$
- b) $m = \frac{1}{4}; y - \text{int} = 7$
- c) $m = -4; y - \text{int} = -7$
- d) $m = -\frac{1}{4}; y - \text{int} = 7$

9) What is the slope, or grade, of a road that rises 7 feet for every horizontal change of 35 feet?

hint: slope = $\frac{\text{rise}}{\text{run}}$

- a) $m = \frac{1}{5}$
- b) $m = \frac{1}{7}$
- c) $m = -\frac{1}{5}$
- d) $m = -\frac{7}{35}$

10) What are the x - and y -intercepts for the graph of $3x - 6y = 18$?

- a) $x - \text{int} = 0; y - \text{int} = 0$
- b) $x - \text{int} = -3; y - \text{int} = 6$
- c) $x - \text{int} = 6; y - \text{int} = -3$
- d) $x - \text{int} = 3; y - \text{int} = -6$

11) What is the equation of the line that passes through $(-1, 4)$ and $(2, -2)$?
(hint: $y = mx + b$)

- a) $y = 2x - 6$
- b) $y = -2x - 2$
- c) $y = -2x + 2$
- d) $y = 2x + 6$

12) What is the equation in slope-intercept form for the line that passes through the points $(-4, 1)$ and $(2, 4)$?

(hint: $y = mx + b$)

- a) $y = \frac{1}{2}x + 3$
- b) $y = -2x - 4$
- c) $y = \frac{1}{2}x - 6$
- d) $y = 2x - 4$

13) At Store A, balloons are sold individually. The cost “ y ” is equivalent to the price of individual balloons times “ x ” balloons purchased. Find the equation that represents the data in this table.

(hint: $y = kx$)

- a) $y = 6x$
- b) $y = 1.25x$
- c) $y = 1.5x$
- d) $y = 7.5x$

| # of balloons (x) | 6 | 12 | 18 | 24 |
|-----------------------|-----|----|------|----|
| \$ cost (y) | 7.5 | 15 | 22.5 | 30 |

- 14) The table below shows the relationship between the cost of mulch at a local garden store and the number of square feet bought. Write an equation that represents the relationship of cost, y , to the number of square feet bought, x .

(hint: $y = kx$)

a) $y = 4.25x$

b) $y = 8.5x$

c) $y = 8.5x + 1$

d) $y = 9.75x$

| # of square feet (x) | cost, \$ (y) |
|--------------------------|------------------|
| 3 | 12.75 |
| 4 | 17 |
| 6 | 25.5 |
| 8 | 34 |