

## 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)  $3$

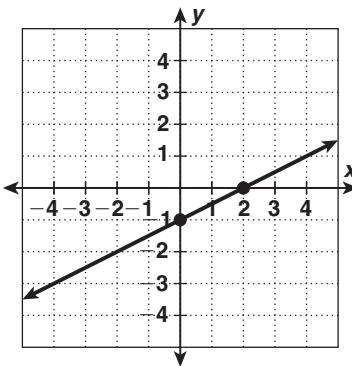
6) What is the slope of the line passing through  $(-3, -1)$  and  $(2, 1)$ ?

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

- 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