Pre Calculus Foundations Math 10
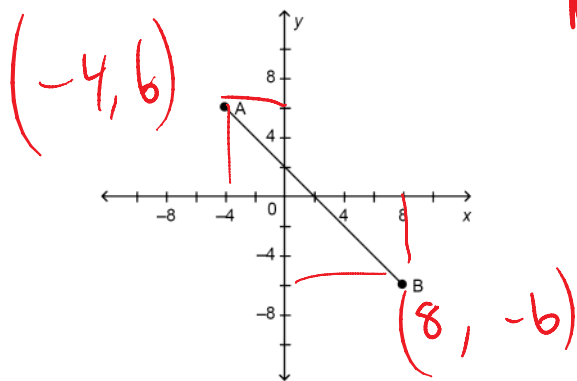
End of Year Review—Chapter 6

Name: _____   Block : _____

Show all work to receive full marks.

1. Determine the slope of this line segment.

$(-4, 6)$

$m = \dfrac{y_2 - y_1}{x_2 - x_1} = \dfrac{-6 - 6}{8 - -4} = \dfrac{-12}{12}$

$m = -1$

$(8, -6)$

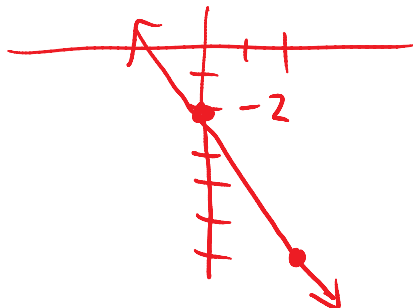2. Determine the slope of the line that passes through $(-11, -8)$ and $(6, 16)$.

$m = \dfrac{y_2 - y_1}{x_2 - x_1} = \dfrac{16 - -8}{6 - -11} = \dfrac{24}{17}$

3. The slopes of two lines are ½ and ½. Are the two lines parallel, perpendicular, or neither?

4. The slopes of two lines are -2 and $\dfrac{1}{2}$. Are the two lines parallel, perpendicular, or neither?

These are negative reciprocals

∴ perpendicular

5. Graph the line with y-intercept -4 and slope -2.

-2

6. The total cost for a cheese of the month club is a flat fee of $22, plus $12.75 per month. Write an equation to represent the total cost, C dollars, for m months of membership.

$$C = 12.75m + 22$$

7. Write an equation for the graph of a linear function that:
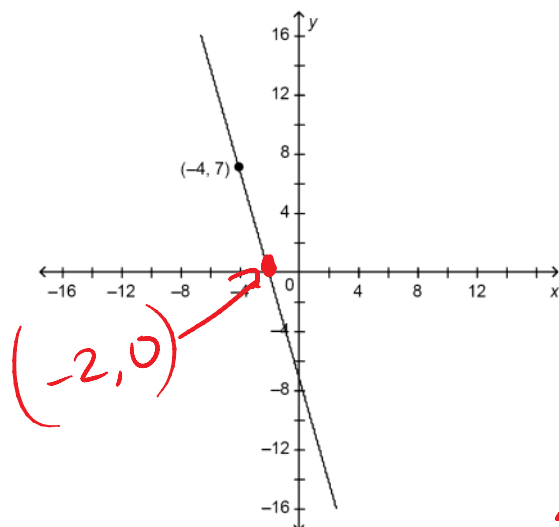   i) has slope 5 and y-intercept -5
   ii) has slope $-\dfrac{5}{6}$ and y-intercept $-\dfrac{6}{5}$
   iii) has slope -5 and y-intercept 6

$$i) \quad y = 5x - 5 \qquad ii) \quad y = -\tfrac{5}{6}x - \tfrac{6}{5}$$

$$iii) \quad y = -5x + 6$$

8. Write an equation in slope-point form for this line.

$(-4, 7)$

$(-2, 0)$

$$m = \frac{0 - 7}{-2 - 4}$$

use point

$(-4, 7)$

$$= \frac{-7}{2}$$

$$x - x_1 = m(y - y_1)$$

$$x - {}^-4 = -\tfrac{7}{2}(y - 7)$$

$$x + 4 = -\tfrac{7}{2}(y - 7)$$

9. Describe the graph of the linear function with this equation: $y + 7 = -8(x + 6)$

The eqn passes through the point $(-6, -7)$ and has a slope -8.

10. Write this equation in slope-intercept form: $y + 7 = \dfrac{2}{7}(x - 5)$

$$7y + 49 = 2(x - 5)$$
$$7y + 49 = 2x - 10$$
$$7y = 2x - 10 - 49$$
$$7y = 2x - \dfrac{59}{7}$$
$$\dfrac{7y}{7} = \dfrac{2x}{7} - \dfrac{59}{7}$$

$$y = \dfrac{2}{7}x - \dfrac{59}{7}$$

11. Write an equation for the line that passes through E(−3, −7) and F(2, 10).
Write the equation in **slope-point form** and in **slope-intercept form**.

Part 1

$$m = \dfrac{y_2 - y_1}{x_2 - x_1}$$

$$= \dfrac{10 - -7}{2 - -3}$$

$$= \dfrac{17}{5}$$

Part 2

slope-point $(2, 10)$

$$y - y_1 = m(x - x_1)$$

$$y - 10 = \dfrac{17}{5}(x - 2)$$

OR

$$y + 7 = \dfrac{17}{5}(x + 3)$$

Part 3 slope-int

$$y - 10 = \dfrac{17}{5}(x - 2)$$
$$5y - 50 = 17(x - 2)$$
$$5y - 50 = 17x - 34$$
$$5y = 17x - 34 + 50$$
$$5y = 17x + 16$$
$$\dfrac{5y}{5} = \dfrac{17x}{5} + \dfrac{16}{5}$$

$$y = \dfrac{17}{5}x + \dfrac{16}{5}$$

12. Identify the graph below that corresponds to each given slope and y-intercept.
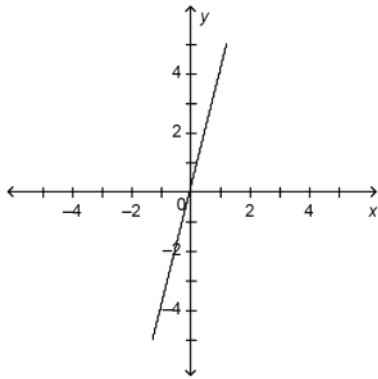
   a) slope $-\dfrac{1}{4}$; y-intercept 0   D

   b) slope -4; y-intercept -3 C

   c) slope 4; y-intercept 0   A
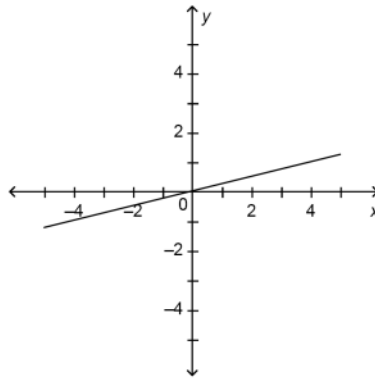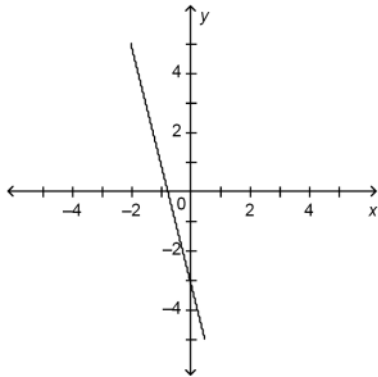
   d) slope $\dfrac{1}{4}$; y-intercept 0   B

Graph A   Graph B

Graph C   Graph D