

Chapter 5 Review

Date

Period

FUNC.c.1 Given two points, find the slope of a line. Clearly show your work. Label your calculations and final answer using the correct variable notation. Circle your final answer.

1) $(-17, 11), (-8, -1)$

$$m = \frac{11+1}{-17+8} = \frac{12}{-9}$$

$$m = \frac{4}{-3}$$

2) $(-12, -17), (-17, -17)$

$$m = \frac{-17+17}{-12+17} = \frac{0}{5}$$

$$m = 0$$

3) $(-4, -11), (-4, -2)$

$$m = \frac{-11+2}{-4+4} = \frac{-9}{0}$$

$$m = \text{UNDEFINED}$$

4) $(-19, -16), (-4, -15)$

$$m = \frac{-16+15}{-19+4} = \frac{-1}{-15}$$

$$m = \frac{1}{15}$$

FUNC.c.2 Write the function of a line in slope-intercept form, given a point and the ordered pair for the y-intercept.

1) Clearly show work to find the slope using the correct variable notation.

2) Identify the y-intercept using the correct variable notation.

3) Write the linear function in slope intercept form using function notation.

5) through: $(5, 0)$ and $(0, 4)$

$$b = 4$$

$$m = \frac{0-4}{5-0} = \frac{-4}{5} \quad m = \frac{-4}{5}$$

S/I Form $\rightarrow y = -\frac{4}{5}x + 4$

Function Form $\rightarrow f(x) = -\frac{4}{5}x + 4$

6) through: $(-3, -4)$ and $(0, -3)$

$$b = -3$$

$$m = \frac{-4+3}{-3-0} = \frac{-1}{-3} \quad m = \frac{1}{3}$$

$$y = \frac{1}{3}x - 3$$

$$f(x) = \frac{1}{3}x - 3$$

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

P/S: $y - y_1 = m(x - x_1)$

7) through: $(3, -1)$, slope = $-\frac{4}{3}$

$$y + 1 = -\frac{4}{3}(x - 3)$$

8) through: $(-3, 1)$, slope = 3

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

FUNC.c.3 Write the function of a line in slope intercept form, given two points.

- 1) Clearly show work to find the slope using the correct variable notation.
- 2) Clearly show work to find the y-intercept using the correct variable notation.
- 3) Write the linear function in slope intercept form using function notation.

9) through: $(-2, 4)$ and $(1, -5)$

$$m = \frac{4+5}{-2-1} = \frac{9}{-3} \quad \underline{\underline{m = -3}}$$

P/s $y - 4 = -3(x + 2)$

← Pick either point

$$\begin{array}{r} y - 4 = -3x - 6 \\ +4 \quad \quad +4 \\ \hline y = -3x - 2 \end{array}$$

S/I

$\boxed{f(x) = -3x - 2}$

10) through: $(-4, 5)$ and $(2, -4)$

$$m = \frac{5+4}{-4-2} = \frac{9}{-6} \quad \underline{\underline{m = -3/2}}$$

P/s $y - 5 = -\frac{3}{2}(x + 4)$

$$\begin{array}{r} y - 5 = -\frac{3}{2}x - 6 \\ +5 \quad \quad +5 \\ \hline y = -\frac{3}{2}x - 1 \end{array}$$

S/I

$\boxed{f(x) = -\frac{3}{2}x - 1}$

Graph equations in point-slope form. (1) State the slope ($m =$) and Point ($_ , _$).

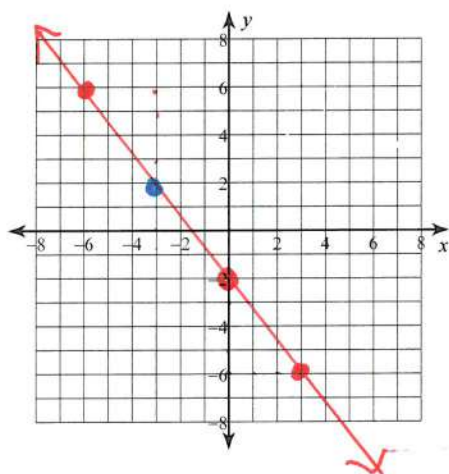
11) $y - 2 = -\frac{4}{3}(x + 3)$

P + $(-3, 2)$ $m = -\frac{4}{3}$

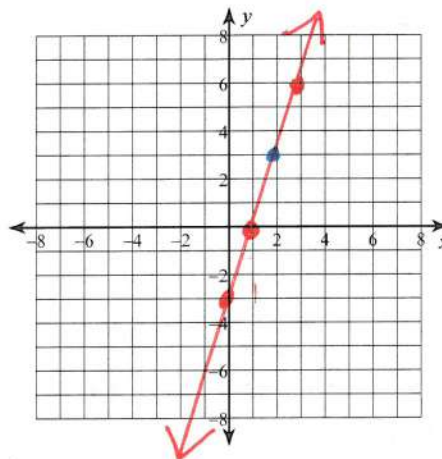
12) $y - 3 = 3(x - 2)$

P + $(2, 3)$ $m = 3/1$

13)



14)



The easiest graphing method is to find x & y int

Graph equations in Standard Form using any graphing method. Show work clearly.

15) $6x - 5y = -30$

x int (x, 0)

$$x: \frac{6}{6}x = \frac{-30}{6}$$

$$x: -5$$

y int (0, y)

$$y: \frac{-5}{-5}y = \frac{-30}{-5}$$

$$y: 6$$

16) $2x - y = 4$

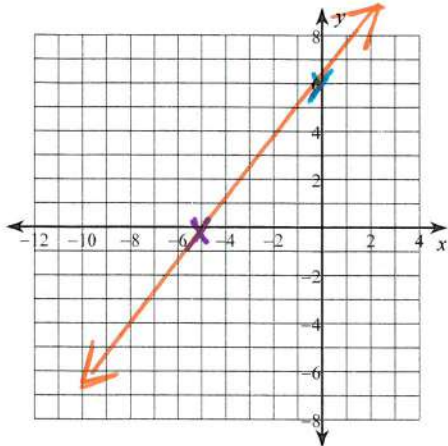
$$x: \frac{2}{2}x = \frac{4}{2}$$

$$x: 2$$

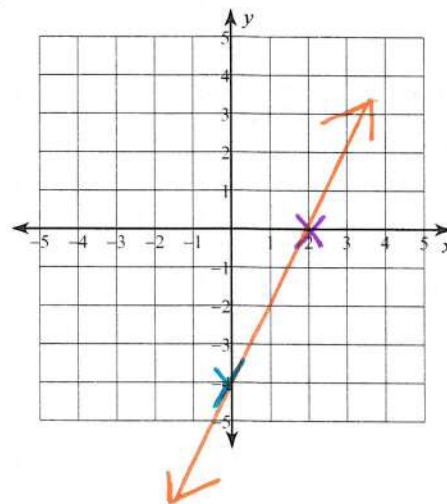
$$y: \frac{-1}{-1}y = \frac{4}{-1}$$

$$y: -4$$

17)



18)



Parallel functions (1) State the slope of the given function, Then (2) Give the slope of parallel functions.

19) $y = -\frac{1}{3}x - 2$

$$m = -1/3$$

$$//m = -1/3$$

20) $(6, 7), (1, -6)$

$$m = \frac{7+6}{6-1} = \frac{13}{5}$$

$$//m = \frac{13}{5}$$

→ // lines have the same slope

Perpendicular functions (1) State the slope of the given function, Then (2) Give the slope of Perpendicular functions.

→ ⊥ lines have negative reciprocal slopes
(aka opposite signs)

21) $y = -\frac{9}{4}x + 4$

$$m = -9/4$$

$$\perp m = 4/9$$

22) $y = 2x + 3$

$$m = 2/1$$

$$\perp m = -1/2$$

23) $y = \frac{1}{5}x - 1$

$$m = 1/5$$

$$\perp m = -5/1 \text{ or } -5$$

24) $(14, -11), (5, 16)$

$$m = \frac{-11-16}{14-5} = \frac{-27}{9}$$

$$m = -3$$

$$\perp m = 1/3$$

SET #1... FUNC.c.4 Given two points from different functions, determine which functions justifying your decisions are

A) Parallel #'s 26 + 27 are // because they have same slopes

B) Perpendicular # 26 + 25 are $\perp$ slopes are
27 + 25 are $\perp$ negative reciprocals

25) (11, -4), (20, -7)

$$m = \frac{-4 - (-7)}{11 - 20} = \frac{3}{-9}$$

$$m = -\frac{1}{3}$$

26) (7, 0), (13, 18)

$$M = \frac{0 - 18}{7 - 13} = \frac{-18}{-6}$$

$$M = 3$$

27) (-15, -20), (-3, 16)

$$M = \frac{-20 - 16}{-15 - (-3)} = \frac{-36}{-12}$$

$$M = 3$$

28) (6, 15), (12, 17)

$$M = \frac{15 - 17}{6 - 12} = \frac{-2}{-6}$$

$$M = \frac{1}{3}$$