# Mid-Chapter 3 Practice

1. Finn swims competitively for his school. The table below shows his distance from the starting point (in meters) and the time since he started (in seconds).

| Time (seconds) | Distance (meters) |
|---|---|
| 7.25 | 11.6 |
| 15.25 | 24.4 |
| 23.25 | 37.2 |

+8, +8 (time) +12.8, +12.8 (distance)

$\Delta x = 8$ $\Delta y = 12.8$

Find Finn's average speed.

$\frac{\Delta y}{\Delta x} = \frac{12.8}{8} = 1.6$ meters/sec

2. Graph the function $8x-4y=32$ by finding the x- and y-intercepts.

x-int

$8x-4(0)=32$

$\frac{8x}{8}=\frac{32}{8}$

$x=4$

x-int = 4

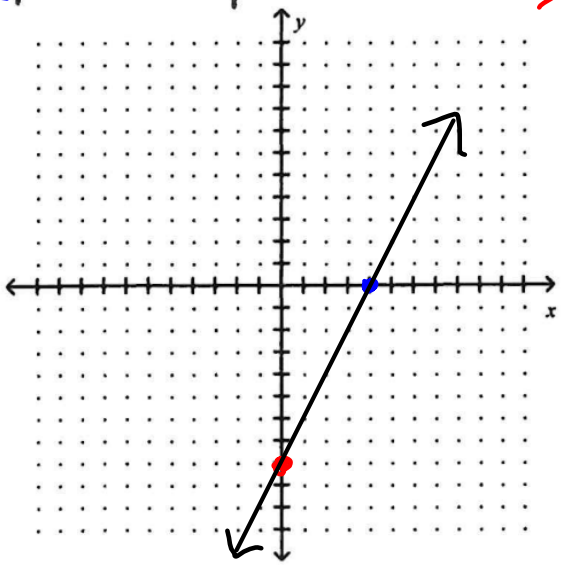
y-int

$8(0)-4y=32$

$\frac{-4y}{-4}=\frac{32}{-4}$

$y=-8$

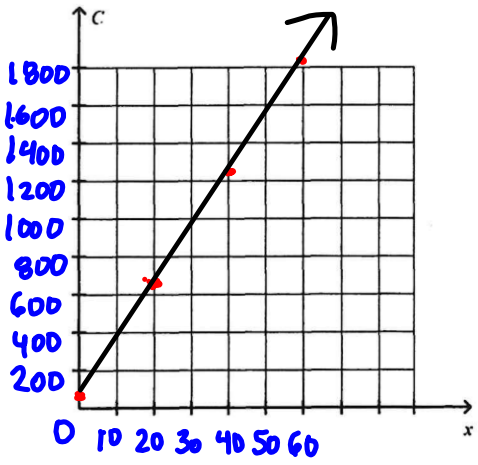
y-int = -8



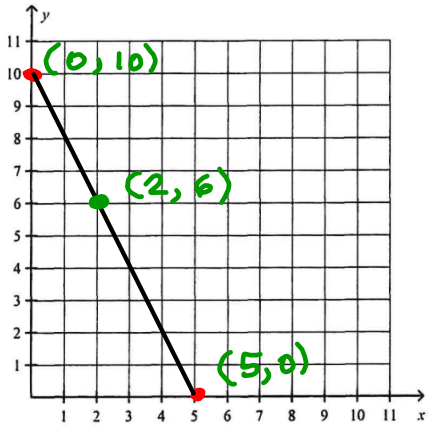

3. a) The cost of a Booster Club order of sweatshirts is $C = 50 + 30x$, where $x$ is the number of sweatshirts ordered. Construct a table of values using a domain of $\{0, 20, 40, 60\}$.

| x | | y |
|---|---|---|
| 0 | 50 + 30(0) | 50 |
| 20 | 50 + 30(20) | 650 |
| 40 | 50 + 30(40) | 1250 |
| 60 | 50 + 30(60) | 1850 |

b) Draw a graph of cost versus number of sweatshirts ordered.



4. Josie sells necklaces for $10 and bracelets for $5 at a Christmas Craft Fair. She wants to earn $50. This situation is modeled by the equation $10x + 5y = 50$ where $x$ is the number of necklaces she sells and $y$ is the number of bracelets she sells. Find the intercepts of the graph of the equation. Then graph the equation. Give three possibilities for the number of bracelets and necklaces that Josie can sell.




x-int

$10x + 5(0) = 50$

$\frac{10x}{10} = \frac{50}{10}$

$x = 5$

y-int

$10(0) + 5y = 50$

$\frac{5y}{5} = \frac{50}{5}$

$y = 10$

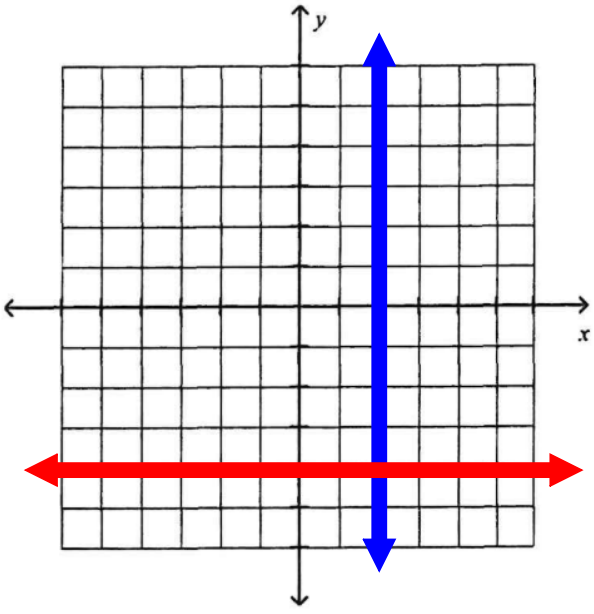
(0, 10) → 0 necklaces, 10 bracelets

(2, 6) → 2 necklaces, 6 bracelets

(5, 0) → 5 necklaces, 0 bracelets

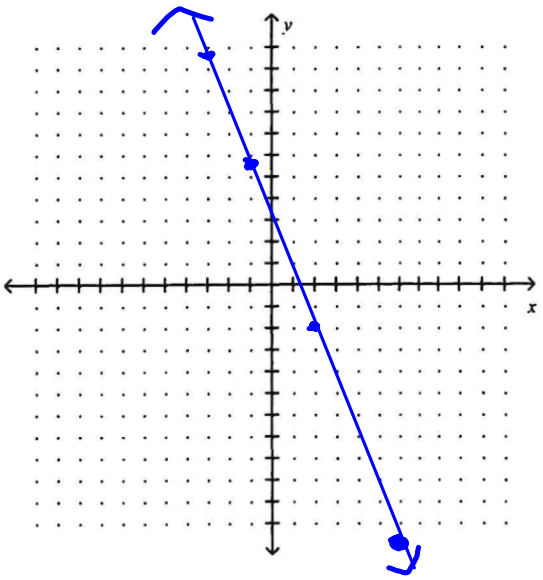
Vertical $x = \#$ Horizontal $y = \#$

5. Sketch the graphs of $x = 2$ and $y = -4$ on the coordinate plane provided below.



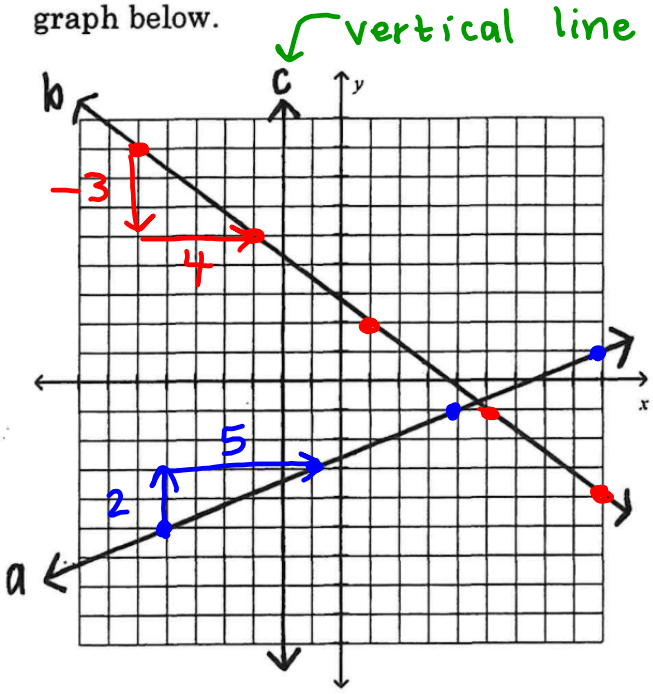
6. Make a table of values for the equation when $x = -3$, $x = -1$, $x = 2$, and $x = 6$. Then graph the equation in the coordinate plane.

$y = -\frac{5}{2}x + 3$




| x | | y |
|---|---|---|
| -3 | $-\frac{5}{2}(-3)+3$ | $\frac{21}{2}$ or $10\frac{1}{2}$ |
| -1 | $-\frac{5}{2}(-1)+3$ | $\frac{11}{2}$ or $5\frac{1}{2}$ |
| 2 | $-\frac{5}{2}(2)+3$ | -2 |
| 6 | $-\frac{5}{2}(6)+3$ | -12 |

7. Find the slopes of lines a, b, & c from the graph below.




line a $m = \frac{2}{5}$

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

line c undefined

8. Find the $x$- and $y$-intercepts of the line with the equation $y = 3x - 8$.

x-int

$0 = 3x - 8$

$+8 \quad +8$

$\frac{8}{3} = \frac{3x}{3}$

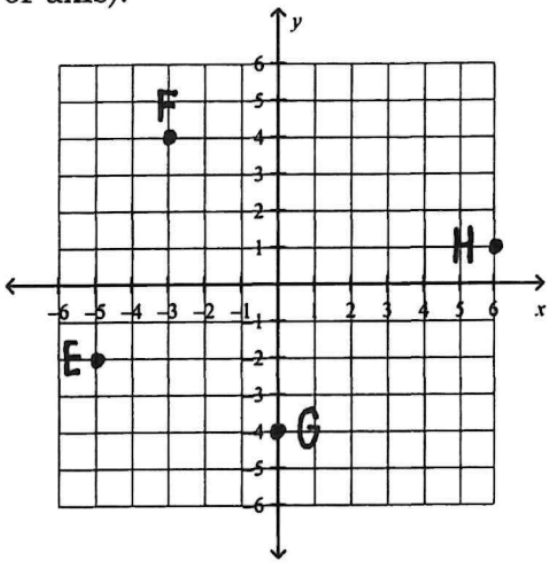
$\frac{8}{3} = x$

y-int

$y = 3(0) - 8$

$y = -8$

9. Write the ordered pair for each point graphed. Describe their location (quadrant or axis).




E (-5,-2) QIII

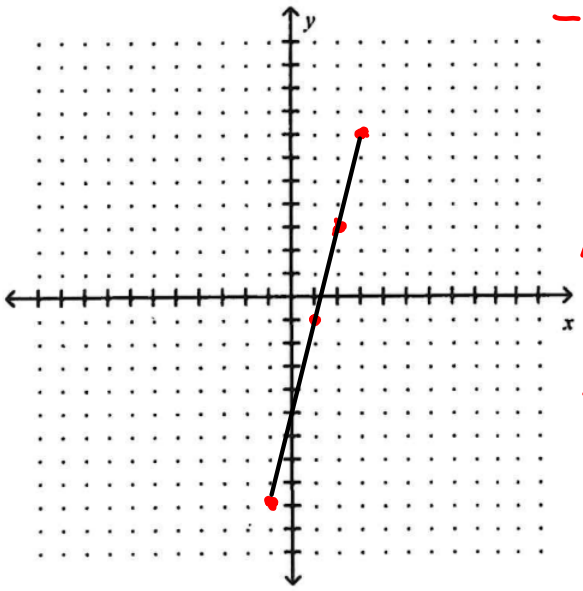
F (-3,4) QII

G (0,-4) y-axis

H (6,1) QI

range $-9 \le y \le 7$
(least ↑, greatest ↑)

10. Graph the function $y = 4x - 5$ with the given domain of $-1 \le x \le 3$. Then identify the range of the function.




| x | | y |
|---|---|---|
| -1 | $4(-1)-5$ | -9 |
| 1 | $4(1)-5$ | -1 |
| 2 | $4(2)-5$ | 3 |
| 3 | $4(3)-5$ | 7 |

11. Find the slope of the line that passes through the following sets of points.

a) $(-1, 11), (2, 10)$
$x_1\ y_1 \quad x_2\ y_2$

$$m = \frac{10-11}{2-(-1)}$$

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

11. Find the slope of the line that passes through the following sets of points.

b) $(4,7),(4,12)$

$x_1\ y_1\quad x_2\ y_2$

$m = \frac{12-7}{4-4}$

$m = \frac{5}{0}$

undefined

11. Find the slope of the line that passes through the following sets of points.

c) $\left(-\frac{1}{2},\frac{3}{8}\right),\left(\frac{5}{8},-\frac{1}{4}\right)$

$x_1\ y_1\quad x_2\ y_2$

$m = \frac{-\frac{1}{4}-\frac{3}{8}}{\frac{5}{8}-\left(-\frac{1}{2}\right)}$

$m = \frac{-\frac{5}{8}}{\frac{9}{8}}$

$m = -\frac{5}{9}$