

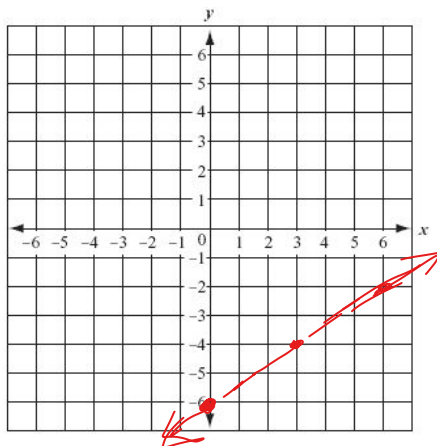
Answer each question, making sure to show your work in the space provided.

Take the time to check your work. Write neatly. Circle your final answer.

1. Graph.

$$f(x) = \frac{2}{3}x - 6$$

$$m = \frac{2}{3} \leftarrow \text{up}$$
$$b = -6 \leftarrow \text{down}$$

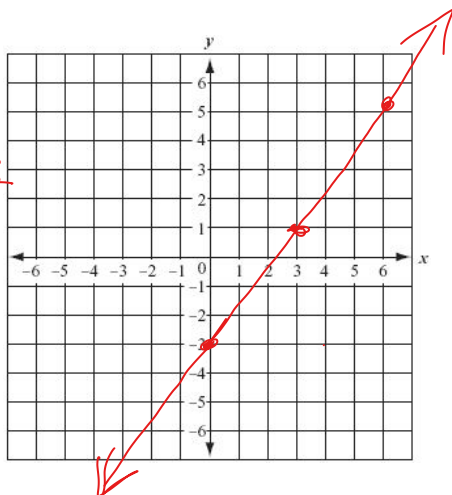


2. Graph.

$$-4x + 3y = -9$$

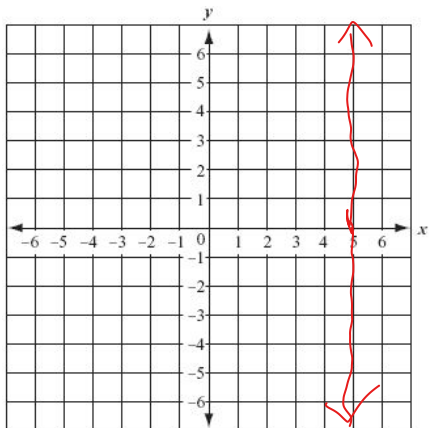
$$+4x \quad +4x$$
$$\frac{3y}{3} = \frac{4x - 9}{3}$$
$$y = \frac{4}{3}x - 3$$

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



3. Graph.

$$x = 5$$

4. Write the equation $8x - 2y = 14$ in slope-intercept form.

$$\begin{aligned} 8x - 2y &= 14 \\ -2y &= -8x + 14 \\ \frac{-2y}{-2} &= \frac{-8x + 14}{-2} \\ y &= 4x - 7 \end{aligned}$$

5. Find the slope of the line passing through the points $(2, -3)$ and $(6, 7)$.

$$m = \frac{7 - (-3)}{6 - 2} = \frac{10}{4} = \frac{5}{2}$$

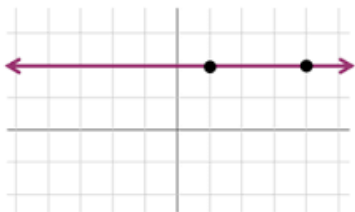
6. Find the slope of the line passing through the points $(-1, 4)$ and $(-1, -8)$.

$$\begin{aligned} &(-1, 4) \quad (-1, -8) \\ &\frac{-12}{0} = \text{undefined} \end{aligned}$$

7. What is the value of y for the line that has a slope of -3 and passes through the points $(6, y)$ and $(2, 5)$?

$$\begin{aligned} -3 &= \frac{5 - y}{2 - 6} \\ -3 &= \frac{5 - y}{-4} \\ -12 &= 5 - y \\ -5 &= -y \\ 7 &= y \\ y &= 7 \end{aligned}$$

8. What is the slope of the line shown below?

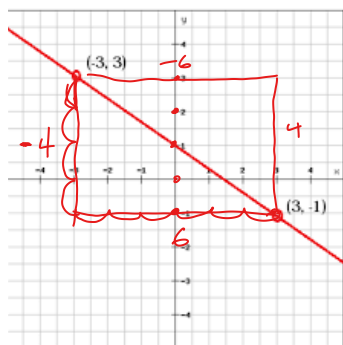


$m = \underline{0}$



$\underline{8}$

9. What is the slope of the line shown below?



$m = \underline{-\frac{4}{6} = -\frac{2}{3}}$

10. Janie deposits \$250 per month into a savings account. When she opened the account, she began with \$720.

- A) Write an equation in slope intercept form for the total balance (B) m months after the account was opened.

$B = 250m + 720$

- B) Using your equation, what would be the account balance after three years (36 months)?

$B = 250(36) + 720$

$\$9,720$

11. Find the slope and y-intercept of the line with the equation $2x + 3y = 12$.

$$\begin{aligned} 2x + 3y &= 12 \\ -2x \quad -2x \\ \hline 3y &= -2x + 12 \\ \frac{3y}{3} &= \frac{-2x + 12}{3} \\ y &= -\frac{2}{3}x + 4 \end{aligned}$$

slope: $-\frac{2}{3}$ y-intercept: $(0, 4)$

12. Identify which of these sequences are arithmetic. Select all that apply.

a) $2\frac{3}{4}, 3\frac{1}{2}, 4\frac{1}{4}, 5, \dots$

~~b) $5, 10, 15, 20, 30, \dots$~~

c) $34, 31, 28, 25, 22, \dots$

~~d) $3, 6, 12, 24, 48, \dots$~~

~~e) $0.01, 0.1, 1, 10, 100, \dots$~~

~~f) $1, 2, 4, 7, 11, \dots$~~

13. Given the arithmetic sequence: 6, 15, 24, 33, ...

$a_n = a_1 + d(n-1)$ $a_1 = 6$ $d = 9$

- A) Write an explicit formula (equation) for the n th term (a_n) of this sequence.

$a_n = 6 + 9(n-1)$

$a_n = 6 + 9n - 9$

$a_n = 9n - 3$

- B) Using your formula, find the 108th term (a_{108}) of the sequence.

$972 - 3$

969

$6 + 9(107)$

$6 + 963$

969