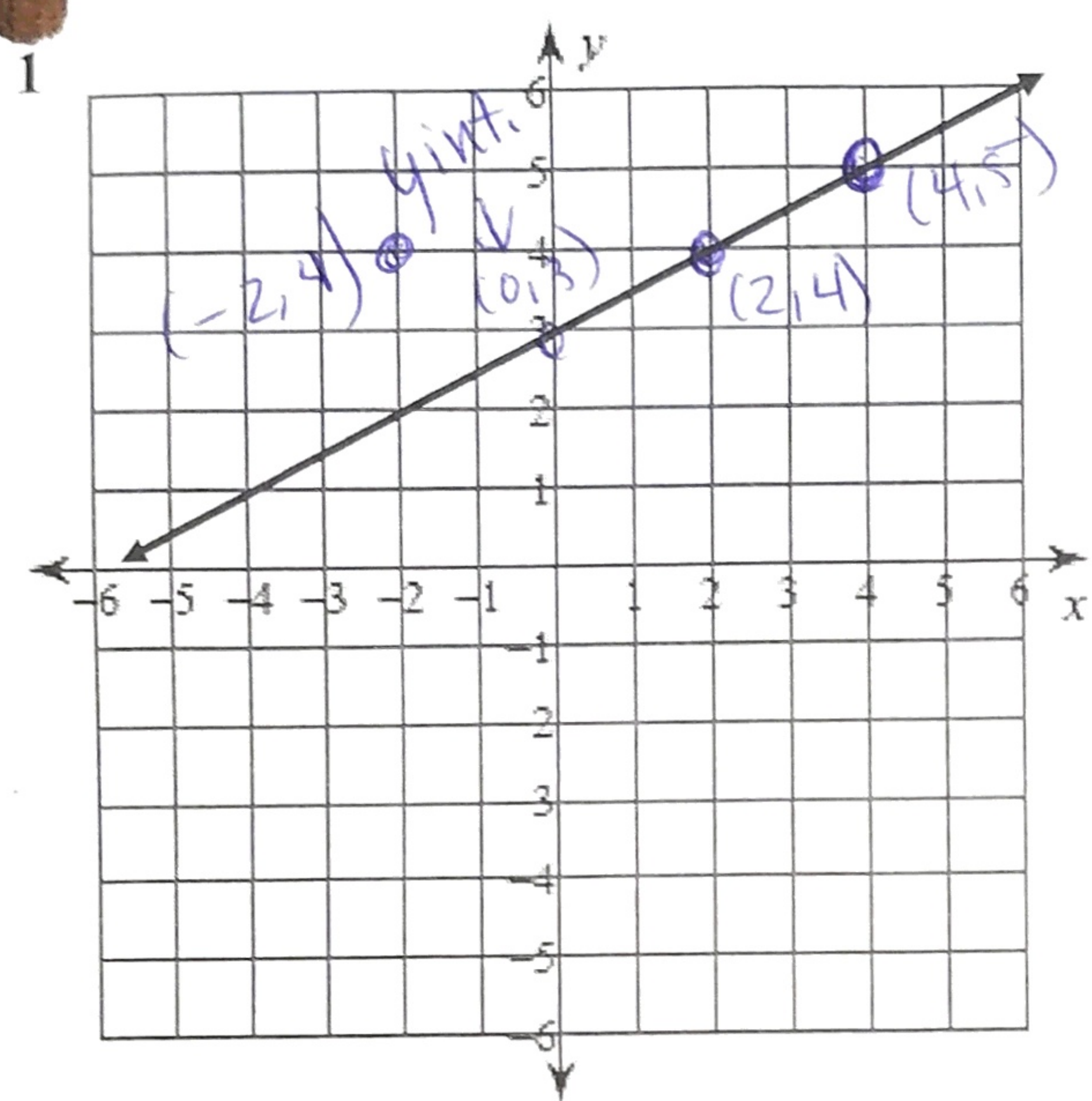


For each graph below, answer the questions.



- a) Using the graph, what is the input when the output is 5.
 $(4, 5)$ the input is 4.
- b) Using the graph, what is the output when the input is 2.
 $(2, 4)$ the output is 4
- c) What is the equation of the line?

$m = \frac{1}{2}$ $b = 3$

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

- d) Using your equation, what is the input when the output is -10.

$-10 = \frac{1}{2}x + 3$

$-3 \quad -3$

$2 \cdot -13 = \frac{1}{2}x \cdot 2$

$-26 = x$

The input is -26

- e) Using your equation what is the output when the input is 24.

$y = \frac{1}{2}(24) + 3$

$y = 12 + 3$

$y = 15$

The output is 15

- f. Is $(-2, 4)$ a solution? Explain using two methods.

NO

① $(-2, 4)$ is NOT on the line.

② $4 = \frac{1}{2}(-2) + 3$

$4 = -1 + 3$

$4 = 2$ ← This is False.

2. Use the equation $f(x) = \frac{2}{3}x - 10$

- a. Find $f(6)$.

$f(6) = \frac{2}{3}(6) - 10$

$f(6) = 4 - 10$

$f(6) = -6$

- b. Find $f(x) = -2$

$-2 = \frac{2}{3}x - 10$

$+10 \quad +10$

$\frac{3}{2} \cdot 8 = \frac{2}{3}x \cdot \frac{3}{2}$

$12 = x$

- c. Is $(14, -\frac{2}{3})$ a solution?

Yes

$-\frac{2}{3} = \frac{2}{3}(14) - 10$

$-\frac{2}{3} = \frac{28}{3} - 10$

$-\frac{2}{3} = \frac{28}{3} - \frac{30}{3}$

$-\frac{2}{3} = -\frac{2}{3}$ True!

There is a back!

3. Write the equation of each line.

a) Through the point (6, 4) with a slope of -3.

$$f(x) = -3x + 22$$

$$y = mx + b$$

$$4 = -3(6) + b$$

$$4 = -18 + b$$

$$\begin{array}{r} +18 \\ +18 \\ \hline 22 = b \end{array}$$

b) through the points (6, -2) with an undefined slope

$$x = 6$$

vertical line!

c) Through the points (4, 1) with a slope of zero horizontal line

$$y = 1$$

OR

$$f(x) = 1$$

d) Through the point (-2, 7) with a slope of $-\frac{4}{3}$

$$f(x) = -\frac{4}{3}x + \frac{13}{3}$$

$$y = mx + b$$

$$7 = -\frac{4}{3}(-2) + b$$

$$7 = \frac{8}{3} + b$$

$$\begin{array}{r} -\frac{8}{3} \\ -\frac{8}{3} \\ \hline \frac{13}{3} = b \end{array}$$

*e) Through the points (4, -2) and (-6, 8)

have to find m first!

$$\frac{8 - (-2)}{-6 - 4} = \frac{10}{-10}$$

$$m = -1$$

PICK EITHER point, should get same answer

$$y = mx + b$$

$$8 = -1(-6) + b$$

$$8 = 6 + b$$

$$\begin{array}{r} -6 \\ -6 \\ \hline 2 = b \end{array}$$

$$y = mx + b$$

$$-2 = -1(4) + b$$

$$-2 = -4 + b$$

$$\begin{array}{r} +4 \\ +4 \\ \hline 2 = b \end{array}$$

$$f(x) = -x + 2$$