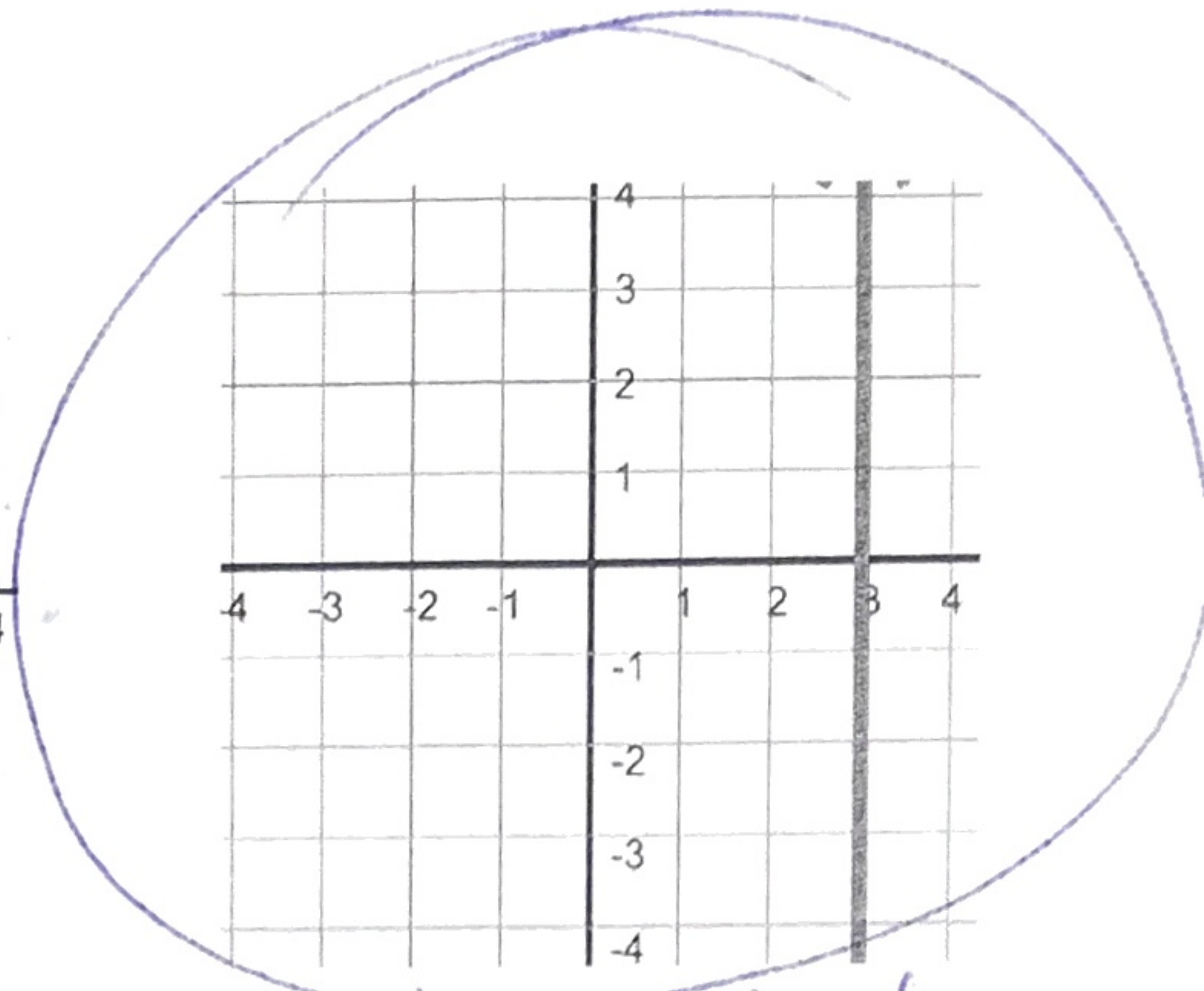
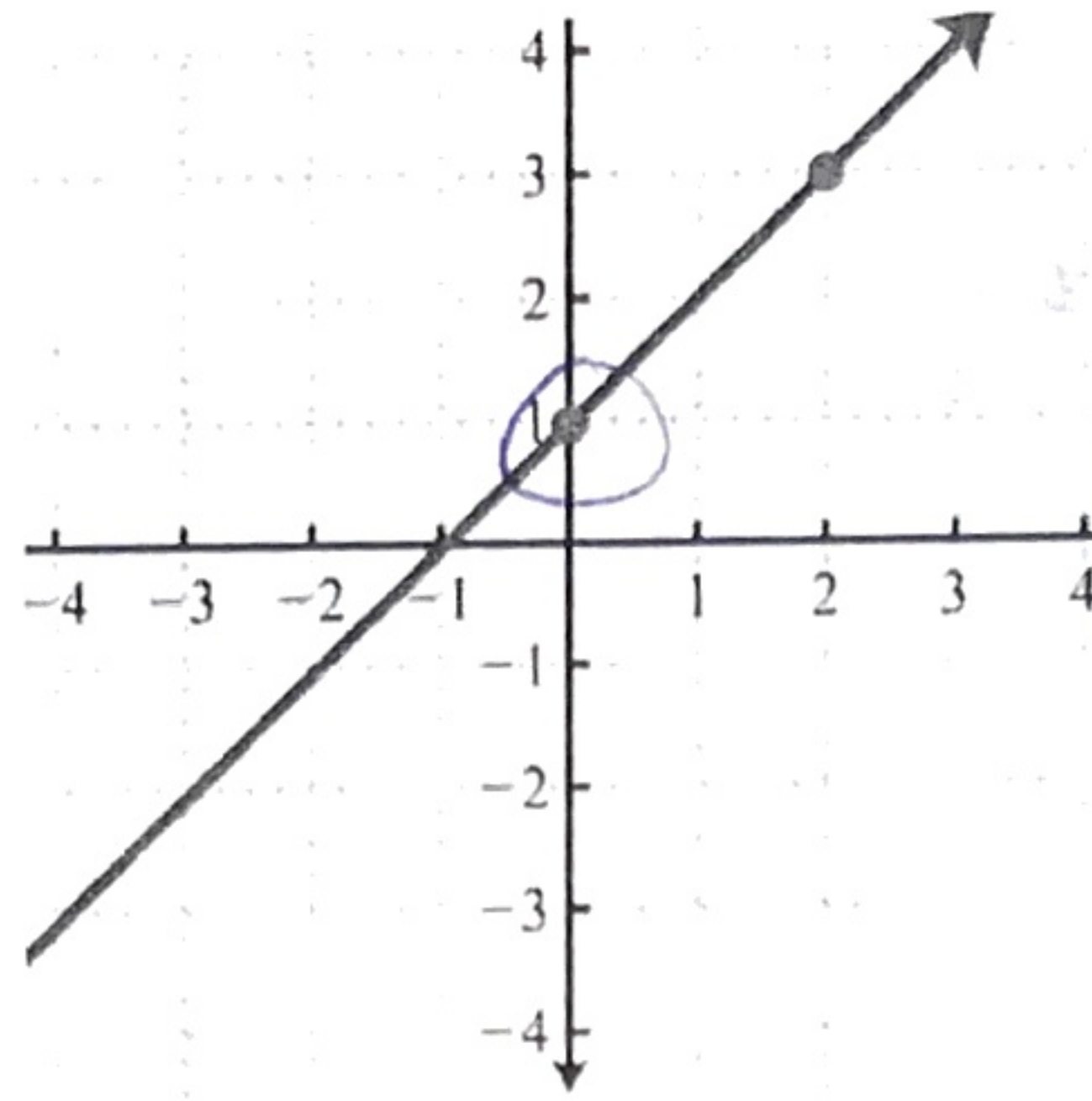
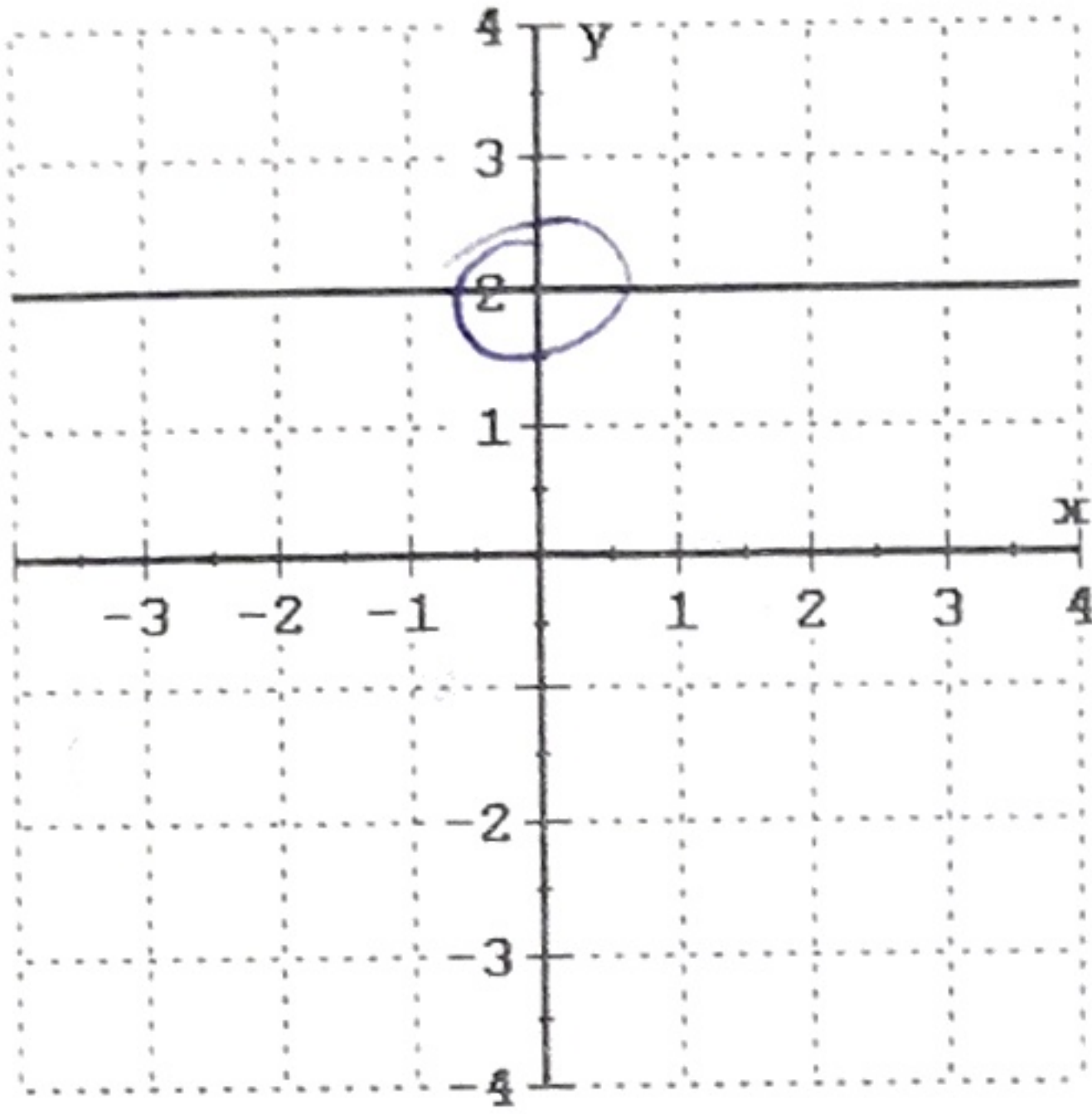


Unit 3b Day 10: Equations of a Linear Function

Focus Question: What is the equation of a linear function?

A. Two of the three graphs below are linear functions.

1. Which one is not a linear function and why not?



2. List all of the things that only the two graphs of linear functions have in common.

y int & slope

*its vertical
the x value 3 has more than 1 dep. value*

3. Based on your list, what do you think are the most important parts of a linear function?

y int & slope

E. The **slope-intercept form** of a function is written $y = mx + b$ where b is the y value of the y-intercept (or where it begins on the y axis when there is a context) and m is the slope (or how the point moves from its previous point).

1. For the equation $y = mx + b$, we say that y depends on x . Explain how we can see that in the equation.

Because the y is isolated

2. Because we know it is a function, we can use function notation & write $f(x) = mx + b$. How can you still tell the x is the independent variable.

its in the ()

3. In the equation $y = \overset{\downarrow}{m}x + b$ or $f(x) = mx + b$, m and b are representing numbers (for example $y = 6x + 2$). What is another vocabulary word for m ? (Hint, it is the number in front of the variable.)

coefficient

4. What is the slope in $y = 6x + 2$?

$y = mx + b$

$m = 6$

$$y = mx + b$$

5. What is another vocabulary word for b ? (Hint, it is a number with no variable.)

constant

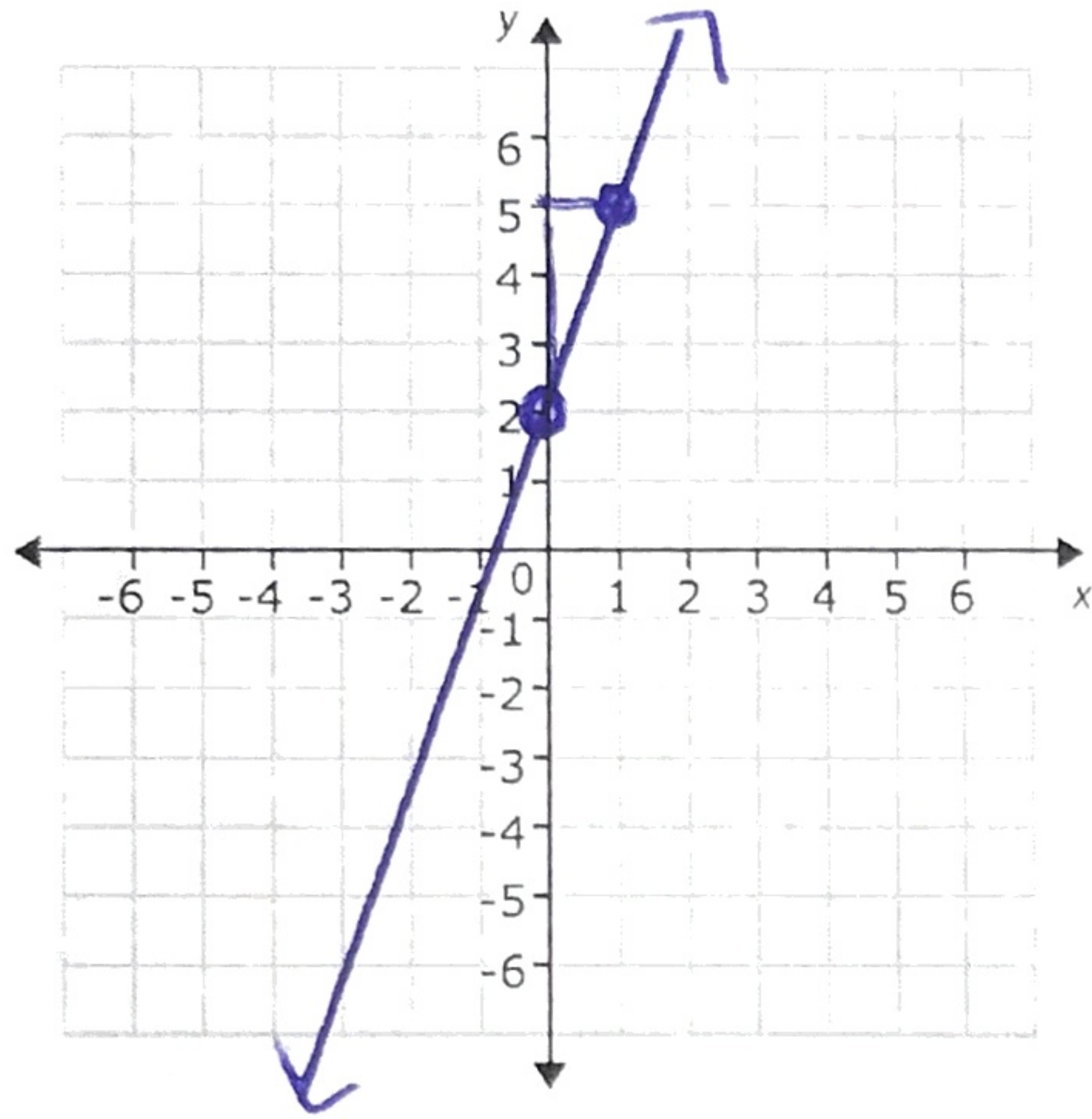
6. What is the y intercept in $y = 6x + 2$?

$$y = mx + b \quad b = 2$$

F. For each equation below, identify the slope and y intercept. Then graph the line.

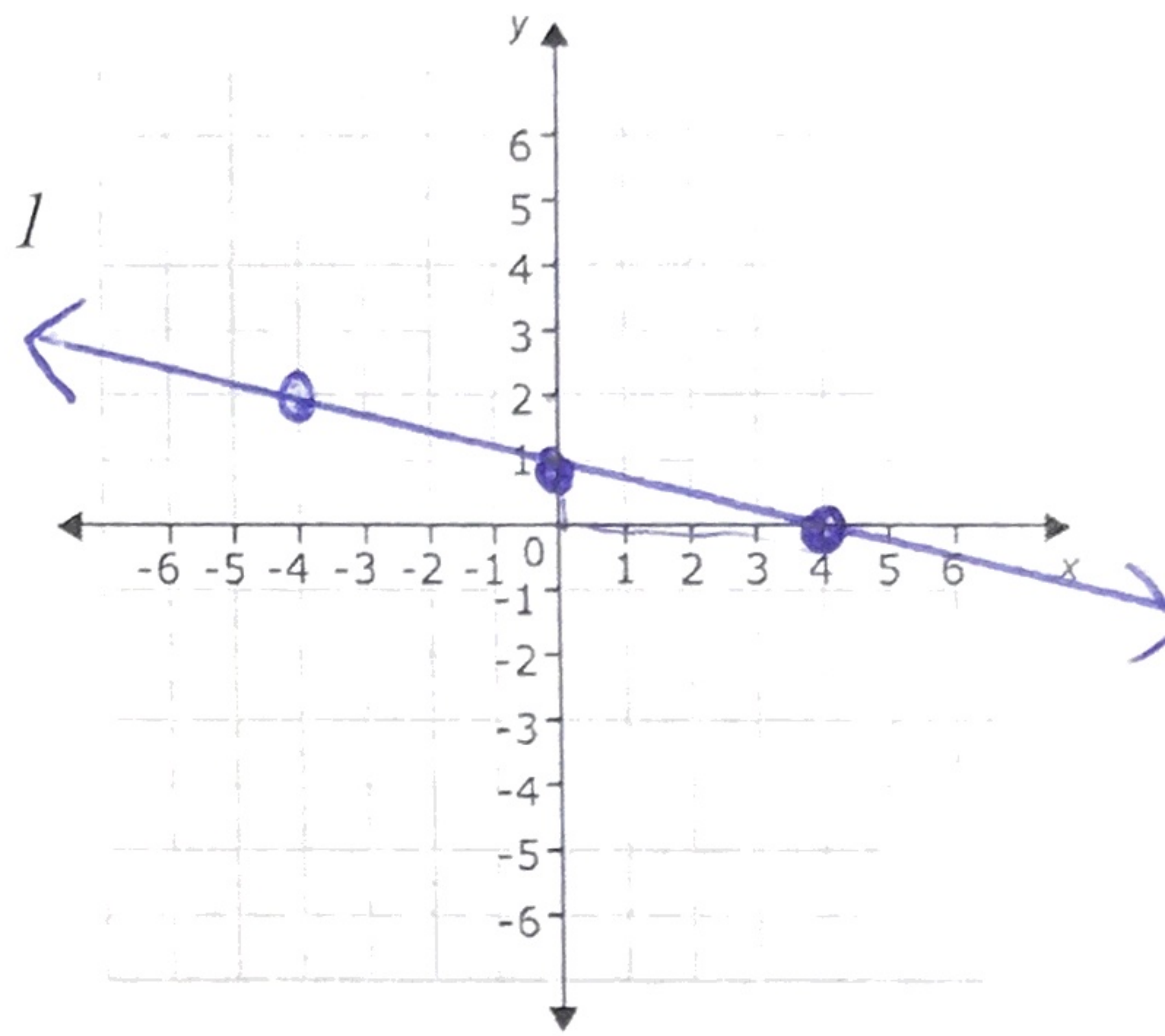
1. $f(x) = 3x + 2$

$$m = \frac{3 \text{ rise}}{1 \text{ run}}$$
$$b = 2$$



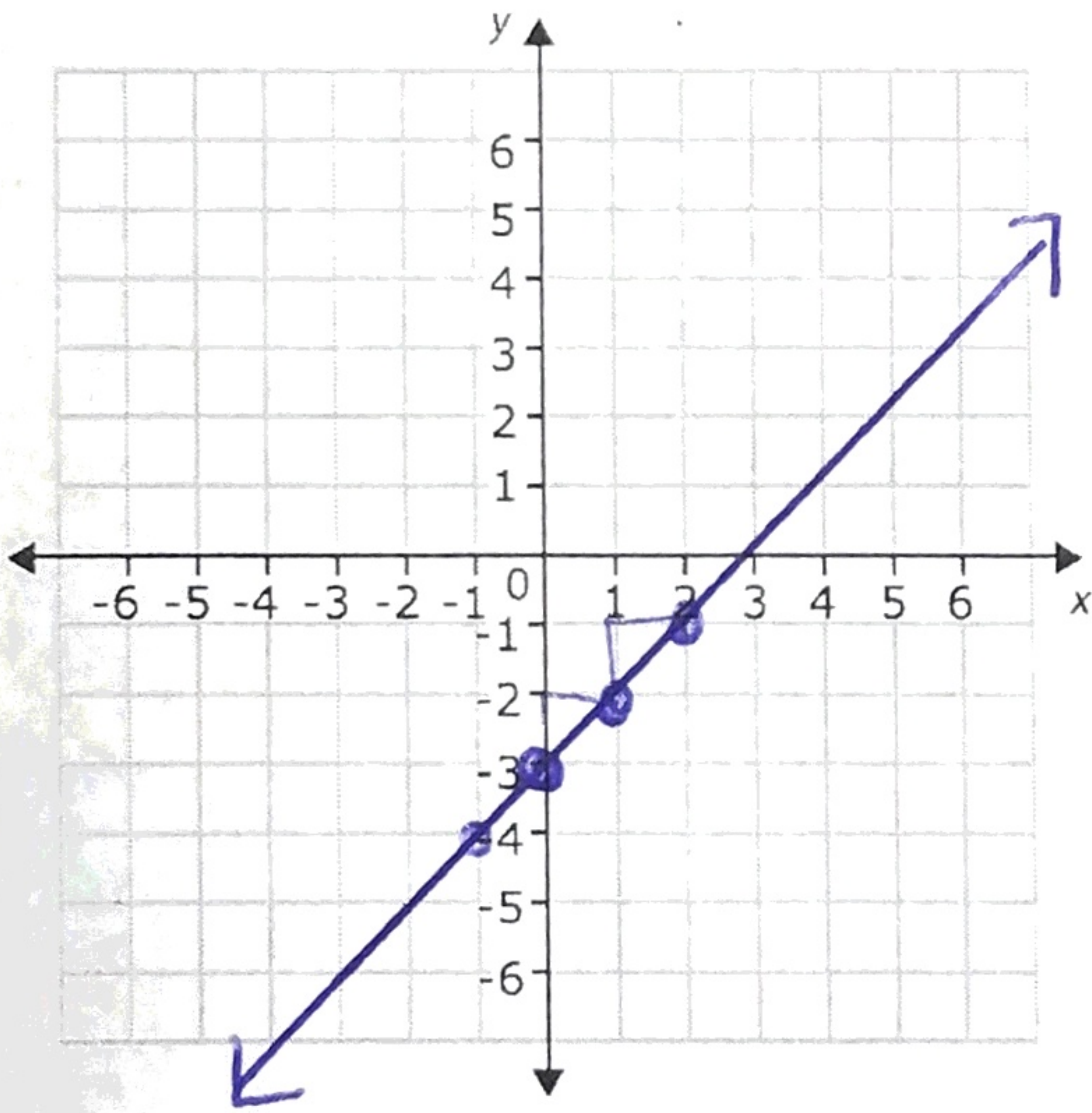
2. $g(x) = -\frac{1}{4}x + 1$

$$m = -\frac{1}{4}$$
$$b = 1$$



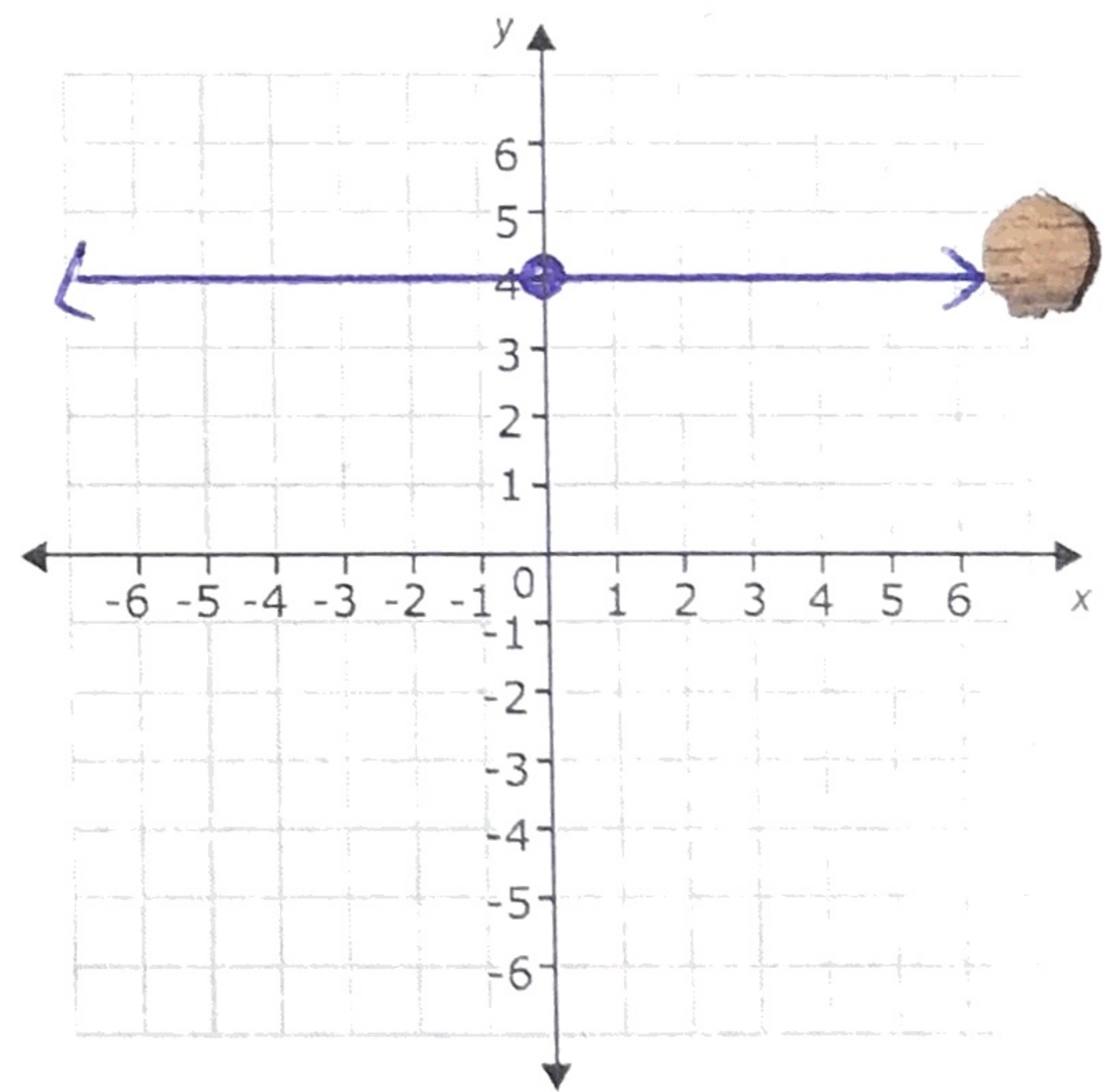
3. $h(x) = x - 3$

$$m = 1$$
$$b = -3$$

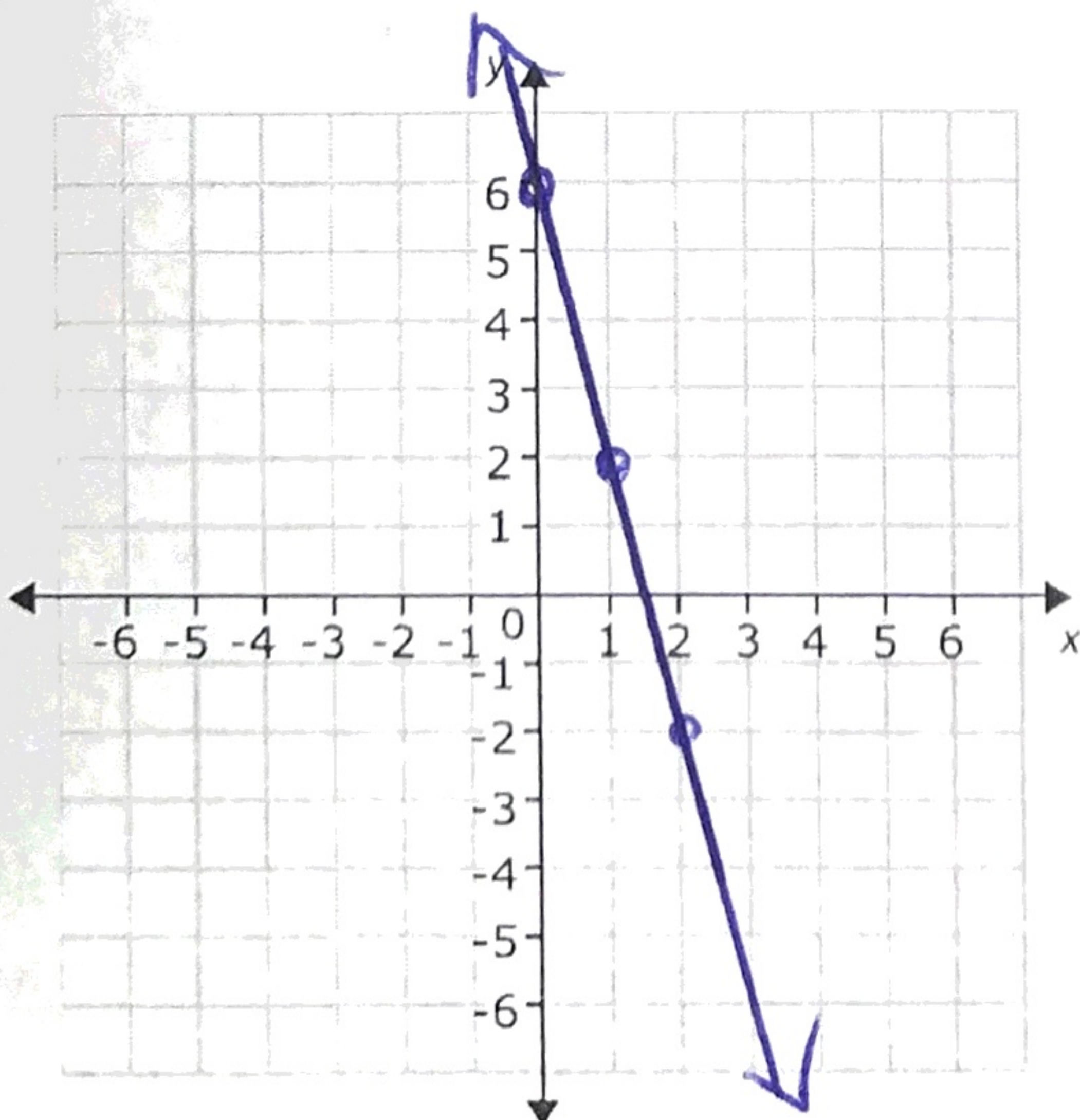


4. $f(x) = 4$

$$m = 0$$
$$b = 4$$



5. $y = -4x + 6$



6. $y = -\frac{2}{3}x - 2$

