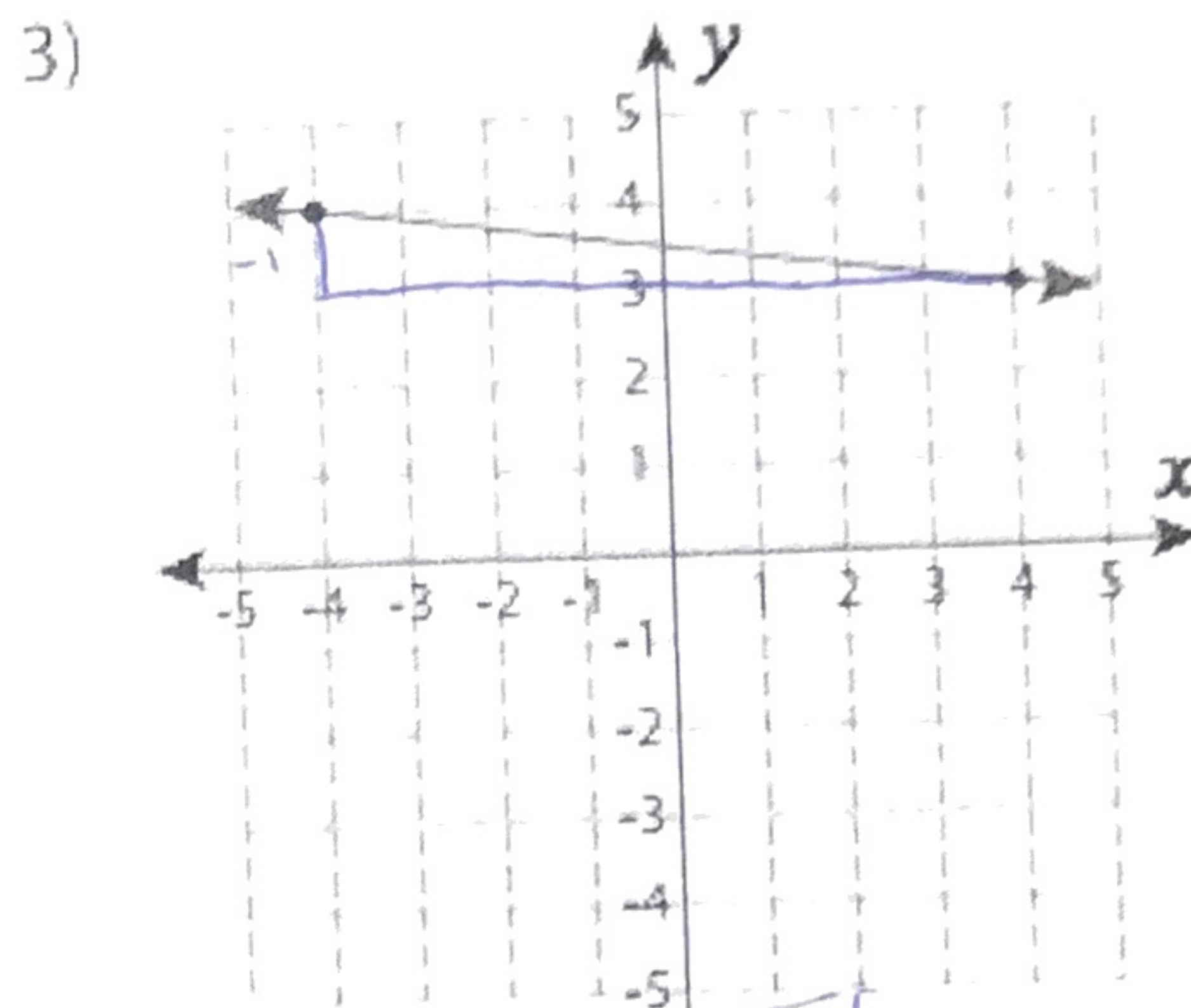
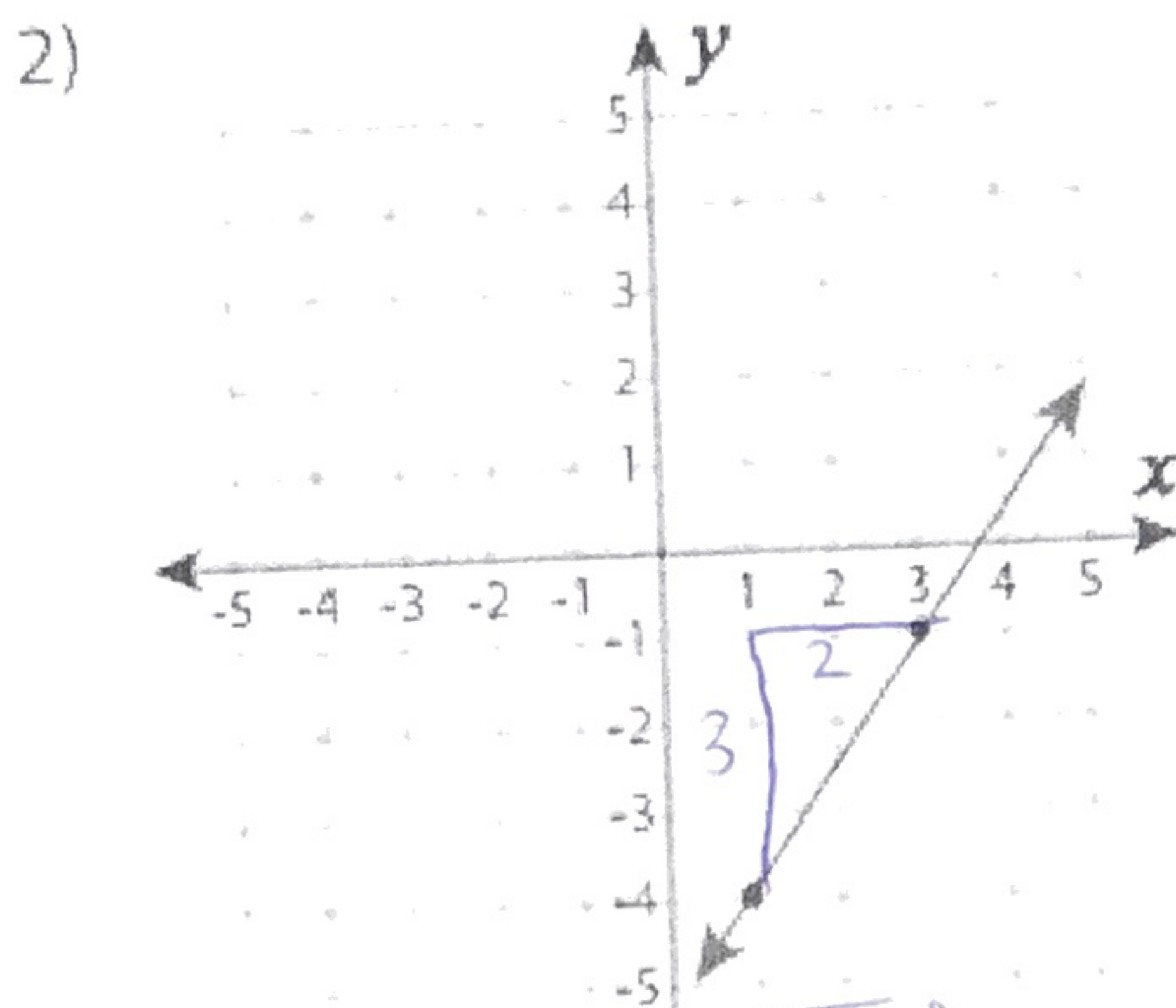
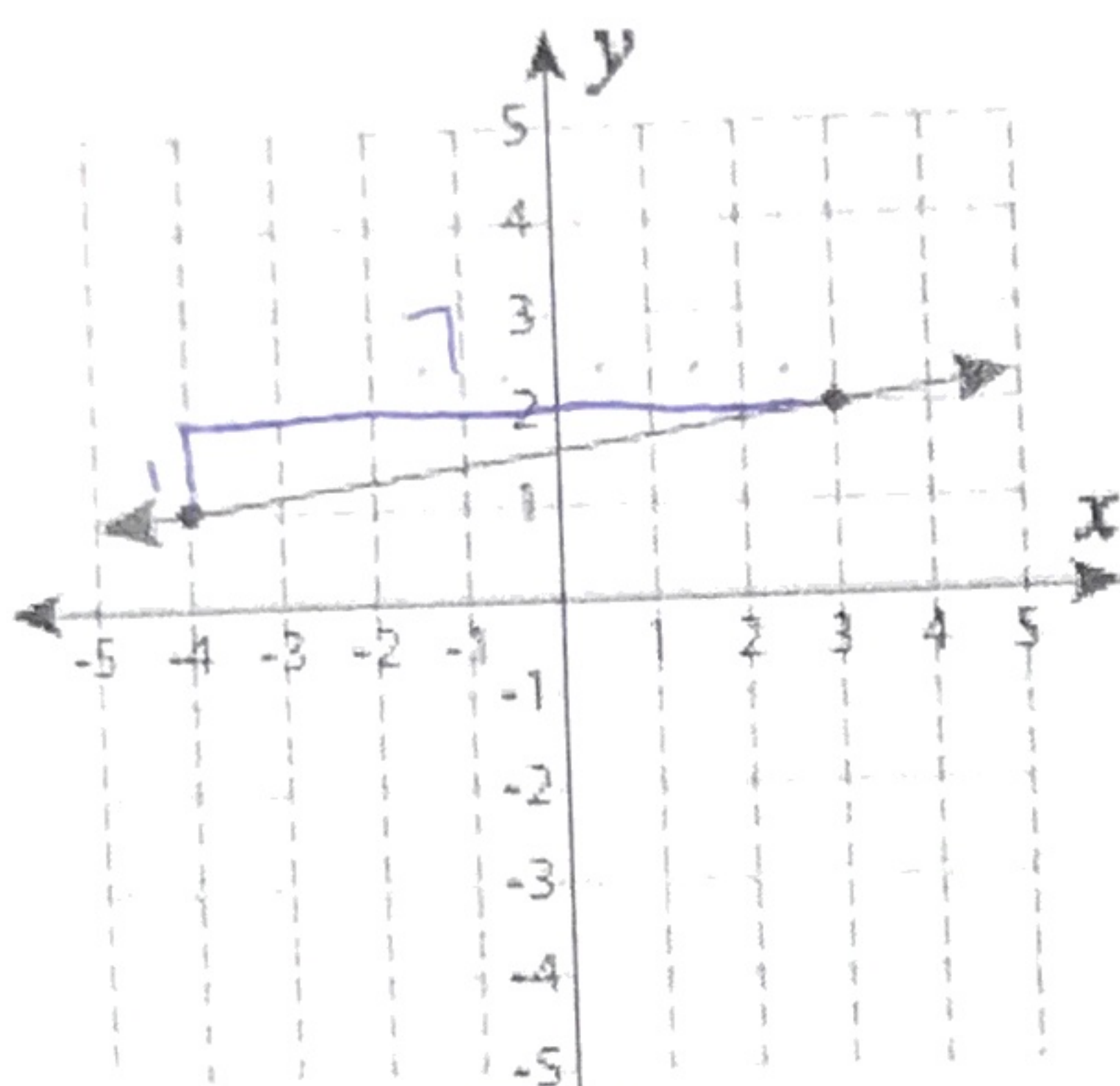
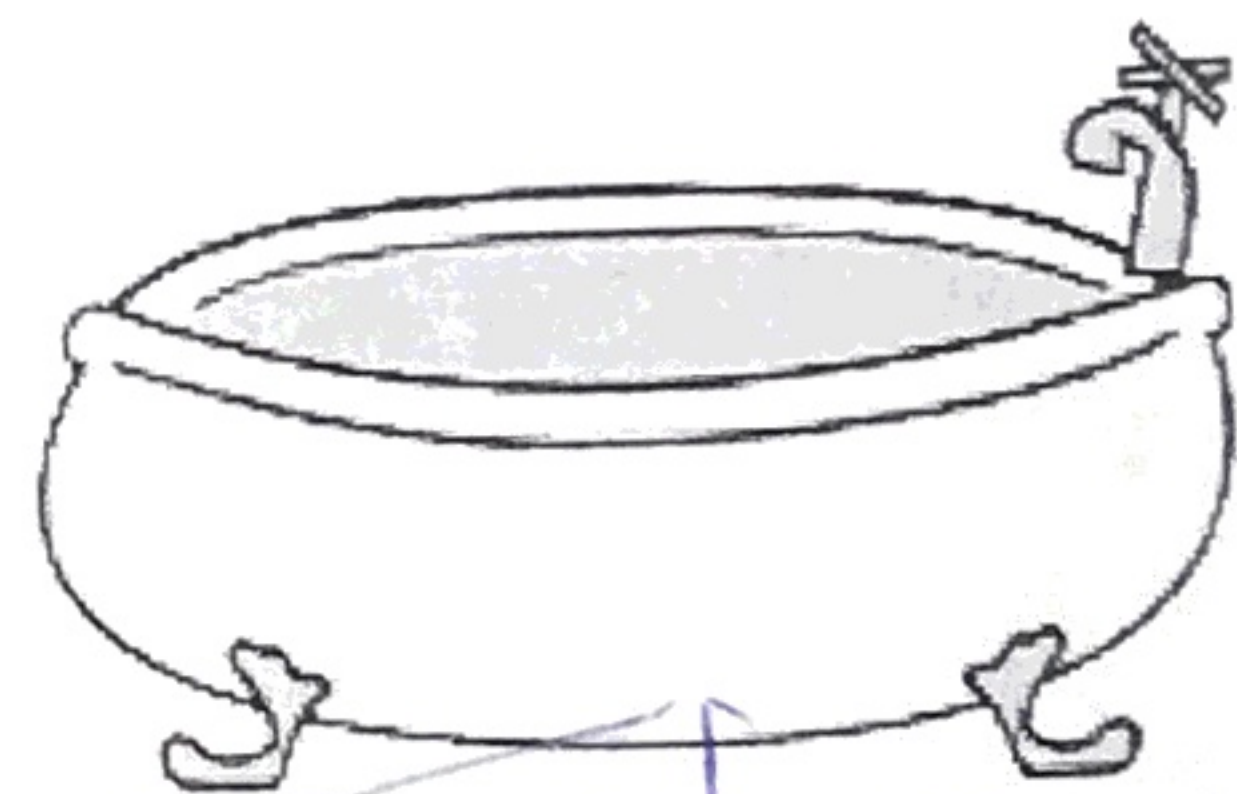
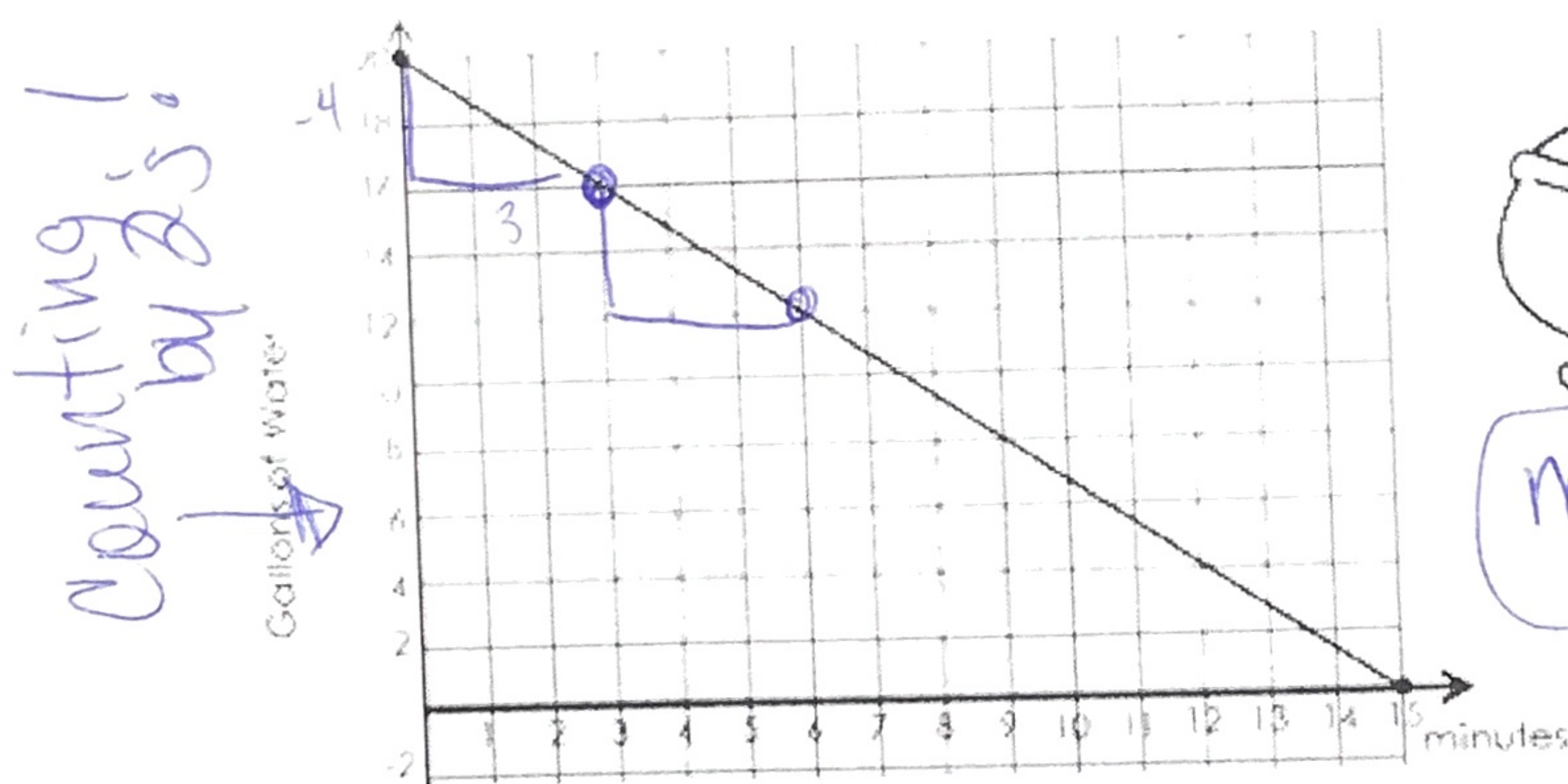


Find the rate of change for each graph. If there is a context, explain what the rate of change means.

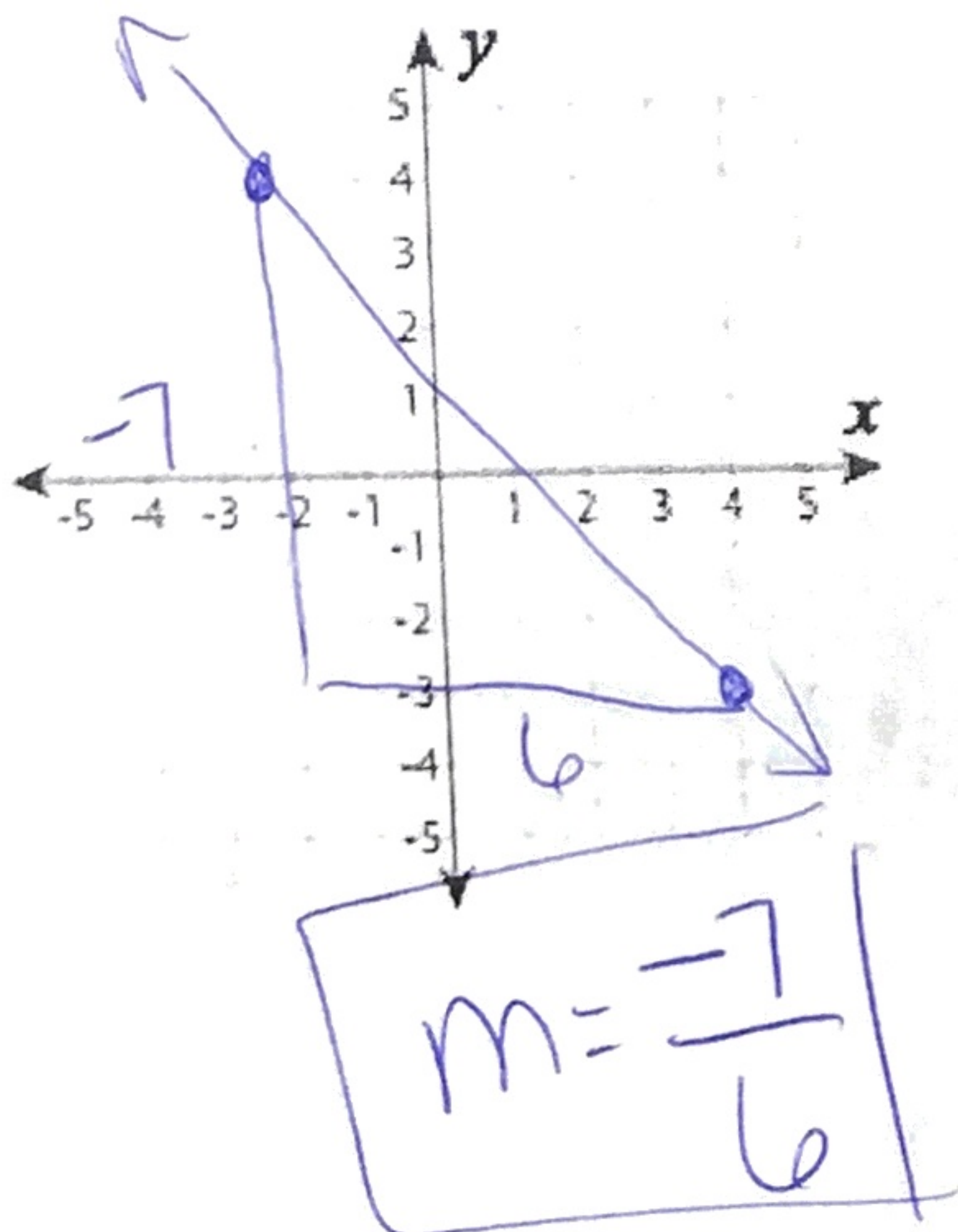


4) Billy Bob has an ancient bathtub that drains slower than the dickens. He filled up his tub and then let the water drain out to see how long it would take to drain. The graph below represents the number of gallons of water remaining in the tub and the time in minutes.

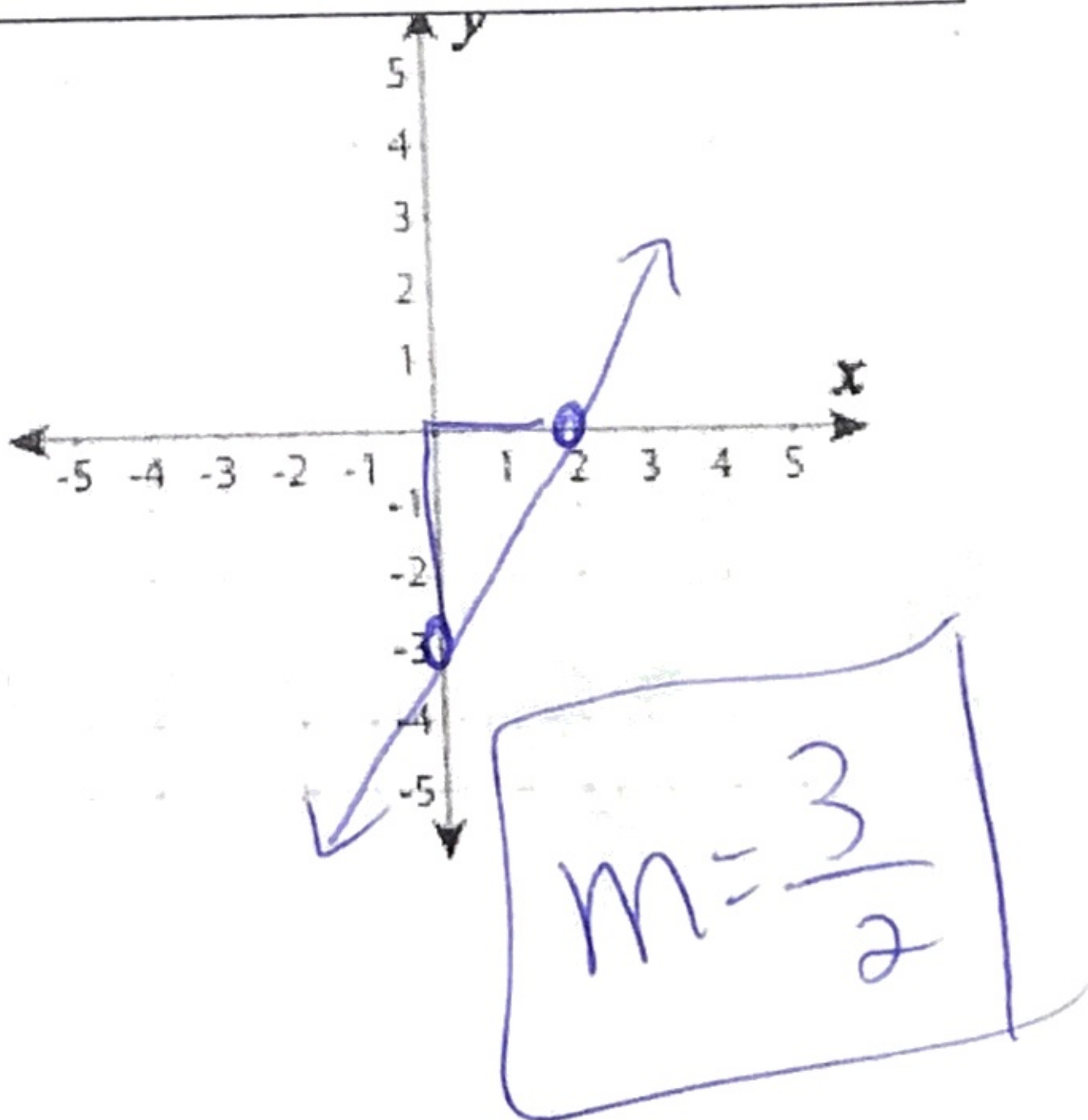


The water drains 4 gallons every 3 minutes

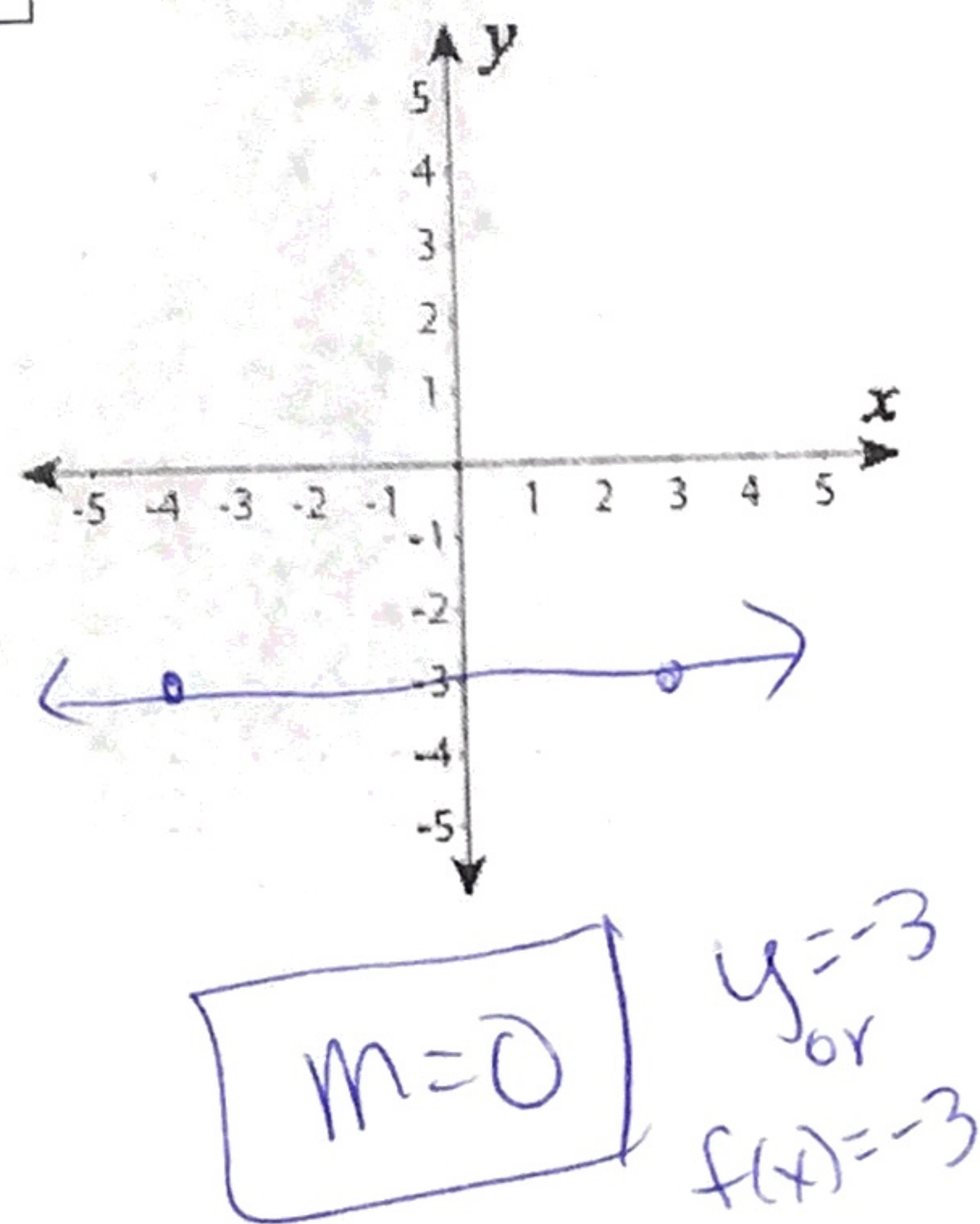
5) (-2, 4) and (4, -3)



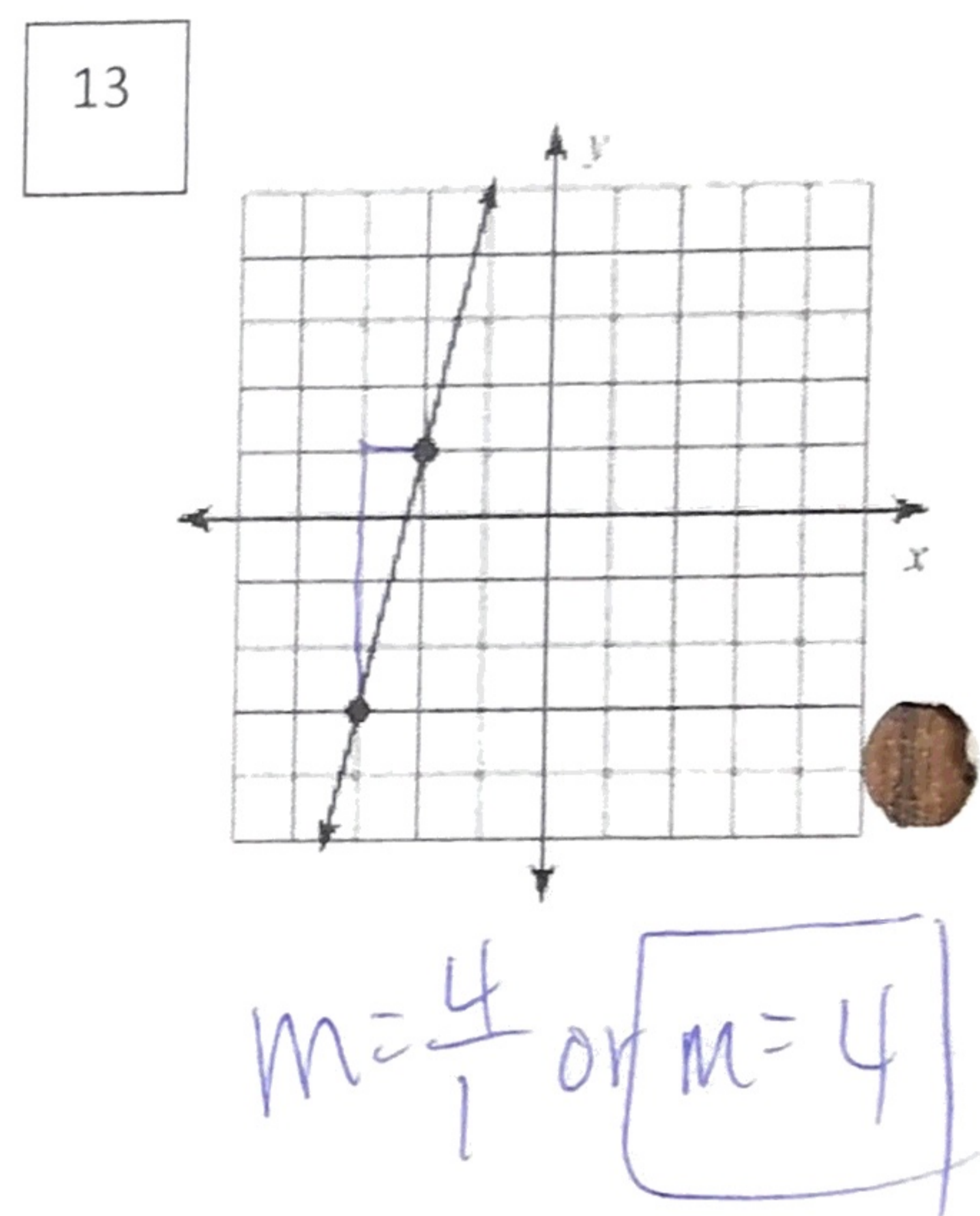
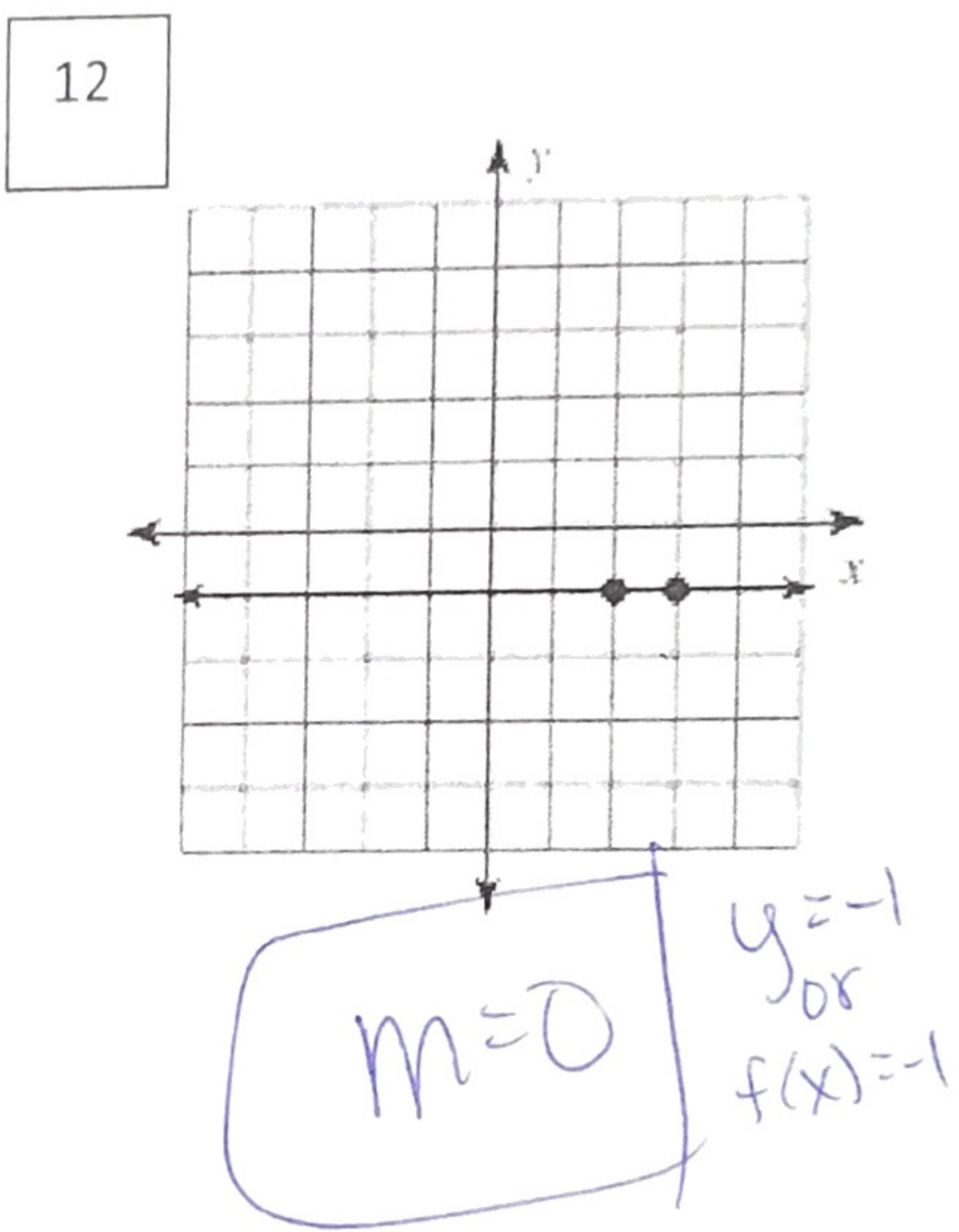
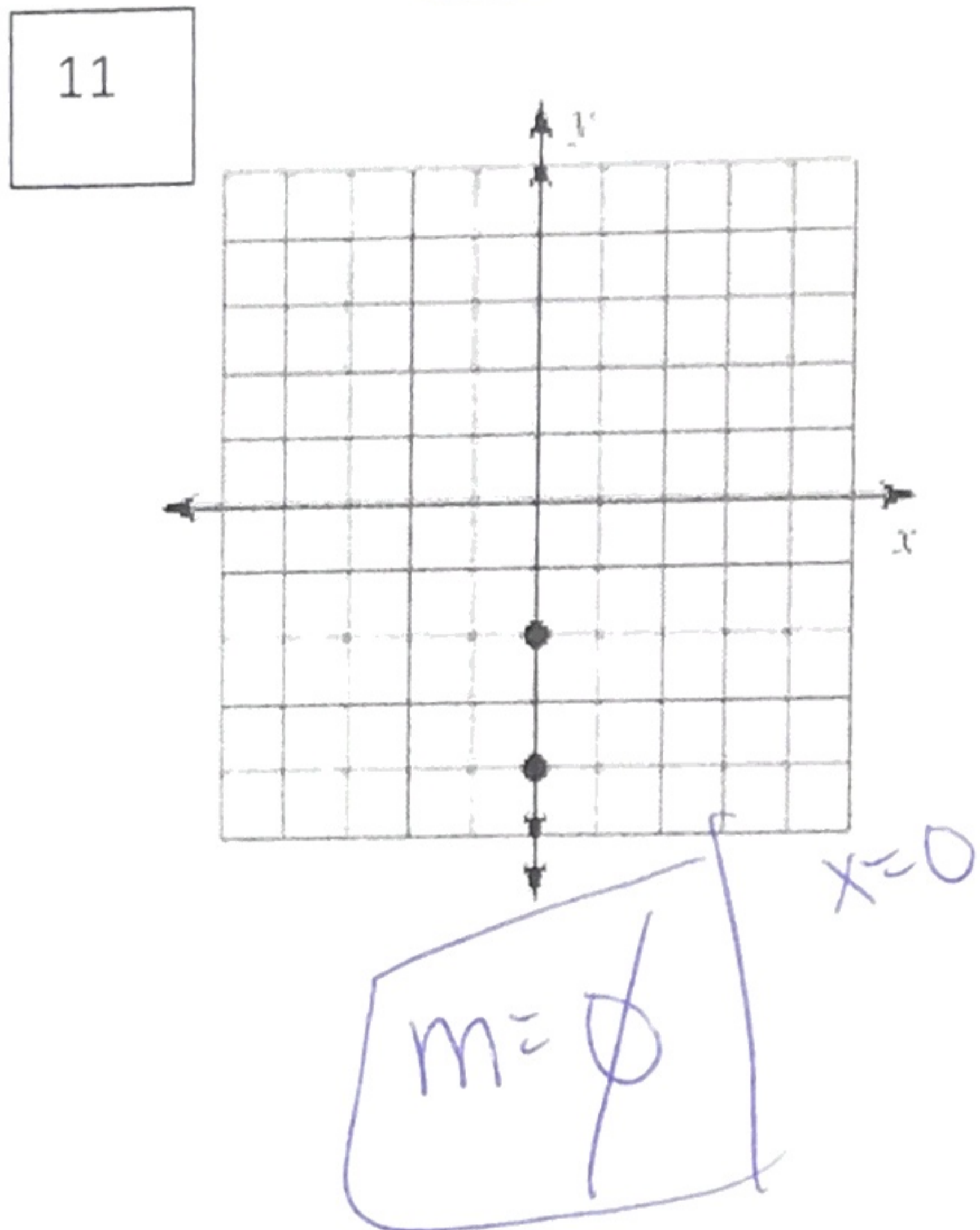
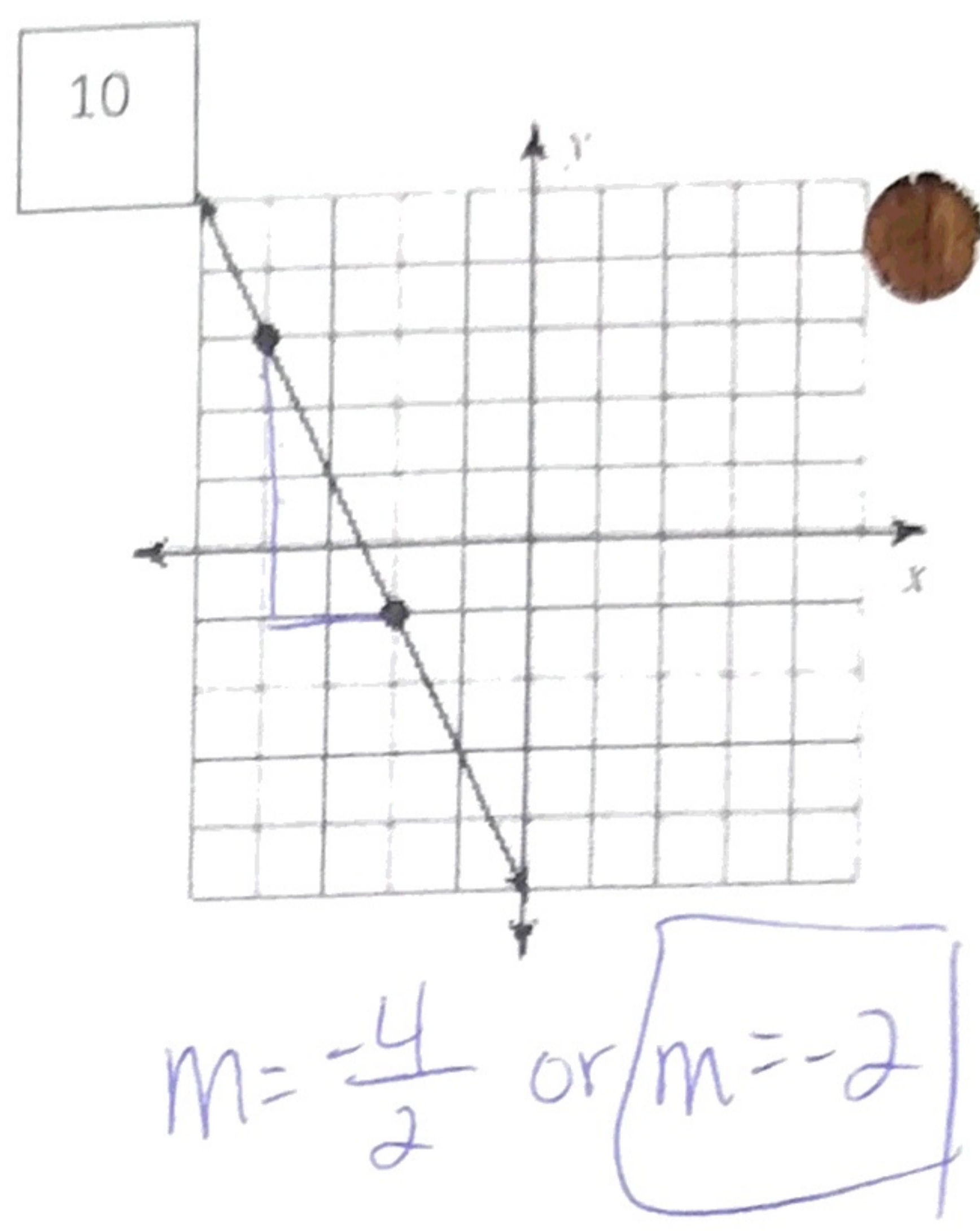
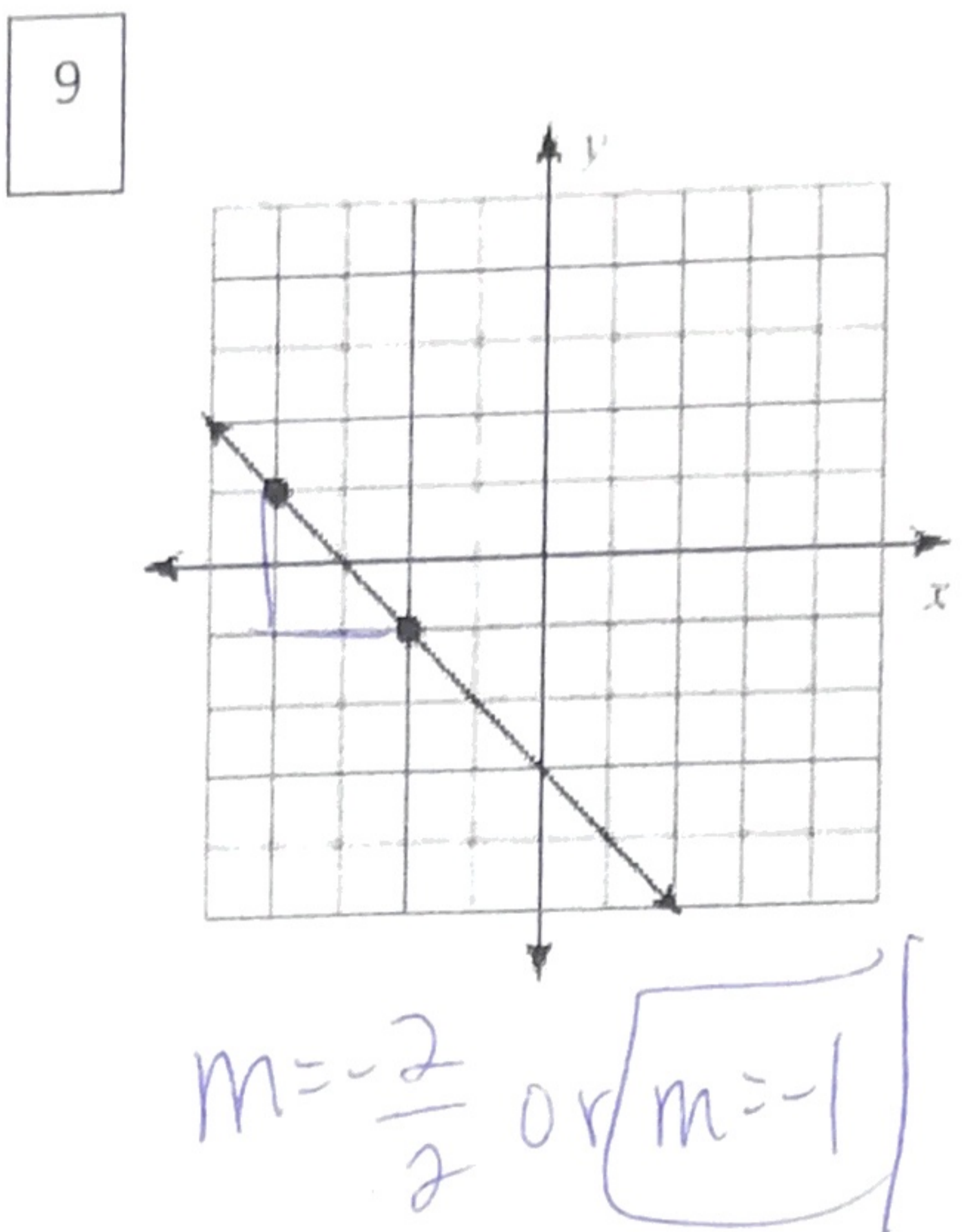
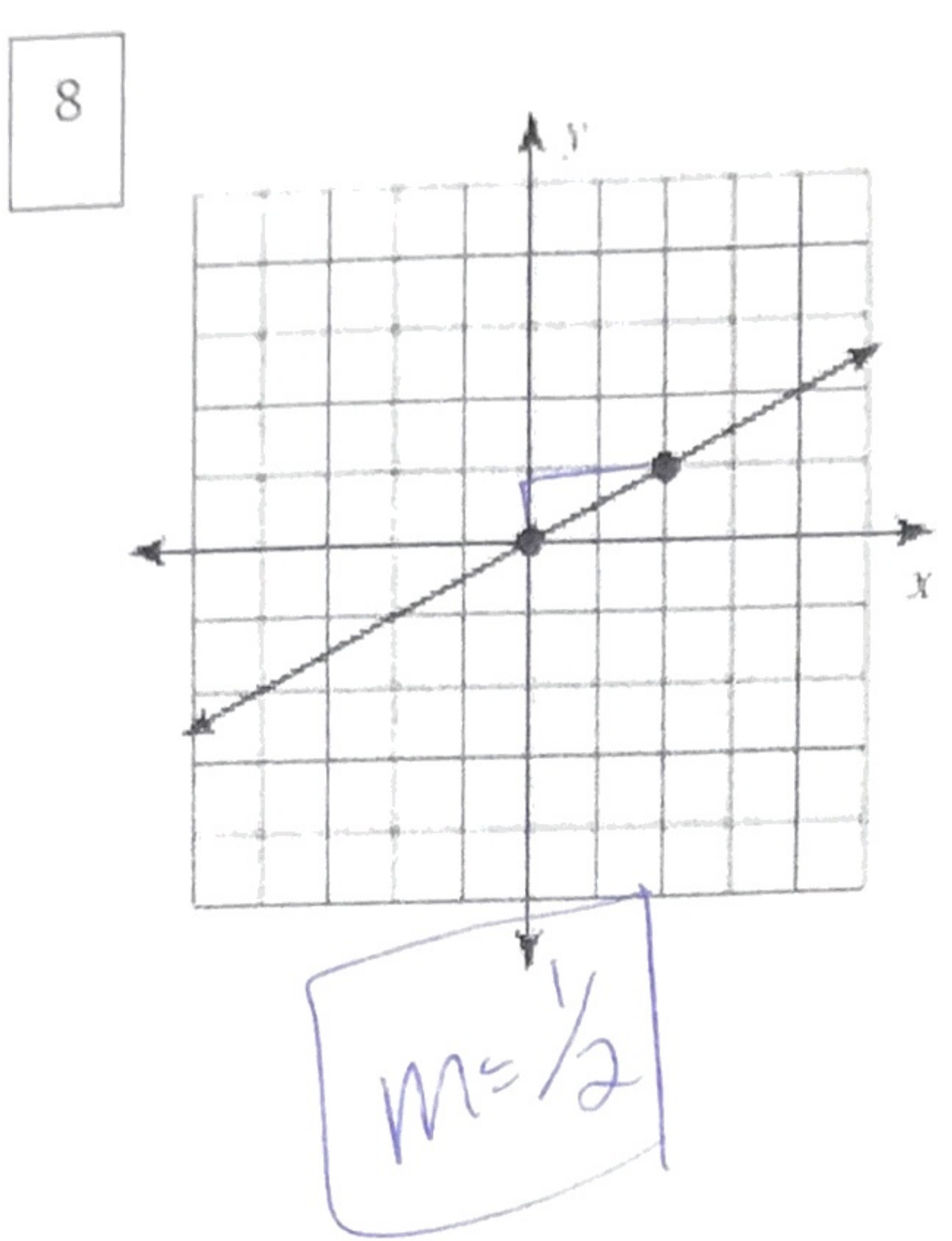
6) (2, 0) and (0, -3)



7) (-4, -3) and (3, -3)



$y = -3$
or
 $f(x) = -3$

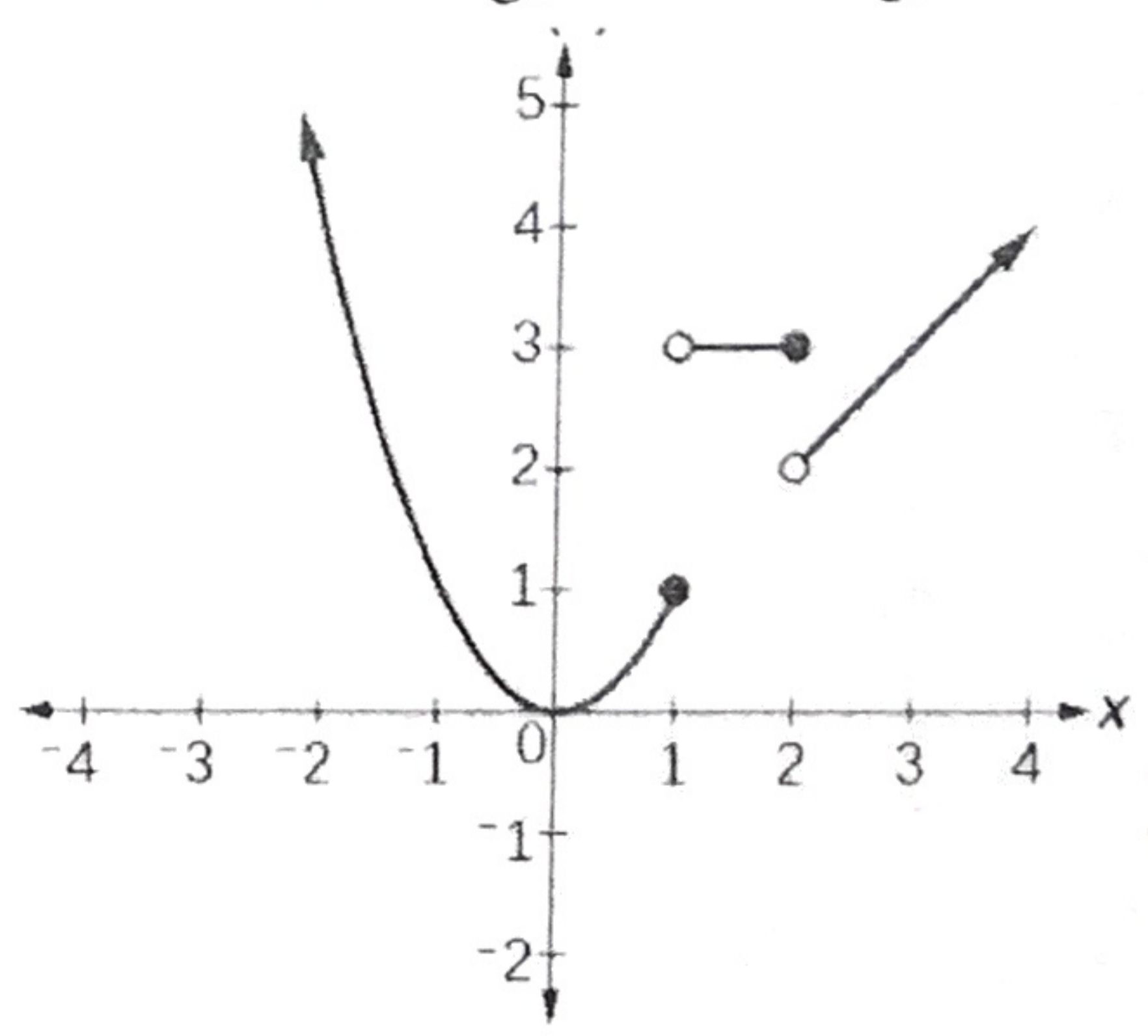


14. Solve $2x - 6 = 5x + 6$

$$\begin{array}{r} 2x - 6 = 5x + 6 \\ -2x \quad -2x \\ \hline -6 = 3x + 6 \\ -6 \quad -6 \\ \hline -12 = 3x \\ \frac{-12}{3} = \frac{3x}{3} \end{array}$$

$-4 = x$

15. Give the intervals of increasing, decreasing, and constant



16. Simplify: $\frac{2x^3y^5z^2}{10x^7y^{-2}} \cdot z^{-2}$

$$\frac{2}{10} x^{3-7} y^{5-(-2)} z^{2+(-2)}$$

$$\frac{1}{5} x^{-4} y^7 z^0$$

$\frac{y^7}{5x^4}$

$(-\infty, 0)$ dec.
 $[0, 1]$ inc.
 $(1, 2]$ const.
 $(2, \infty)$ inc.