

HW: Worksheet

$$\frac{\Delta y}{\Delta x}$$

Warm up:

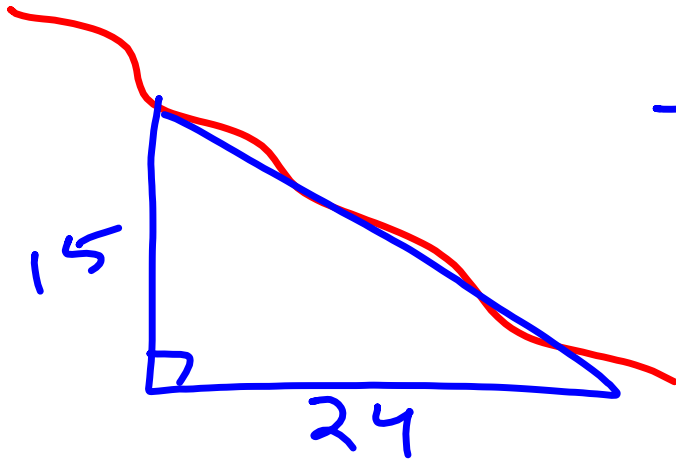
Find the slope of the line through the given points.

1) (4, 9) and (2, 10) $\frac{10-9}{2-4} = \frac{1}{-2} = -\frac{1}{2}$

2) (-5, 3) and (8, -12) $\frac{-12-3}{8-(-5)} = \frac{-15}{13} = -\frac{15}{13}$

3) (-4, -1) and (-7, -6) $\frac{-1-(-6)}{-4-(-7)} = \frac{5}{3}$

4) (0, 7) and (-3, 9) $\frac{7-9}{0-(-3)} = \frac{-2}{3} = -\frac{2}{3}$



$$-\frac{15}{24} = -$$

④

x	0	2	4	6
y	9	4	-1	-6

$$\frac{\Delta y}{\Delta x} = \frac{9-4}{0-2} = \frac{5}{-2} = -\frac{5}{2}$$

Q6

x	-3	3	9	15
y	-3	1	5	9

$$\frac{\Delta y}{\Delta x} = \frac{5-1}{9-3} = \frac{4}{6} = \frac{2}{3}$$

$$\textcircled{17} \quad \begin{array}{l} (0, 1) \\ (2, 7) \end{array} \quad \frac{\Delta y}{\Delta x} = \frac{7-1}{2-0} = \frac{6}{2} = \textcircled{3}$$
$$\frac{1-7}{0-2} = \frac{-6}{-2} = \textcircled{3}$$

$$\textcircled{18} \begin{pmatrix} 2, 5 \\ 3, 1 \end{pmatrix}$$

$$\frac{5-1}{2-3} = \frac{4}{-1} = \textcircled{-4}$$

$$\textcircled{19} \begin{pmatrix} 1, 2 \\ 4, 7 \end{pmatrix}$$

$$\frac{2-7}{1-4} = \frac{-5}{-3} = \textcircled{\frac{5}{3}}$$

HW Solutions

Find the slopes of the following functions.

1) $y = 3x + 1$

x	$3x+1$	y
0	$3(0)+1$	1
1	$3(1)+1$	4

$(0, 1)$
 $(1, 4)$

$$\frac{\Delta y}{\Delta x} = \frac{4-1}{1-0} = \frac{3}{1} = 3$$

2) $y = -2x - 5$

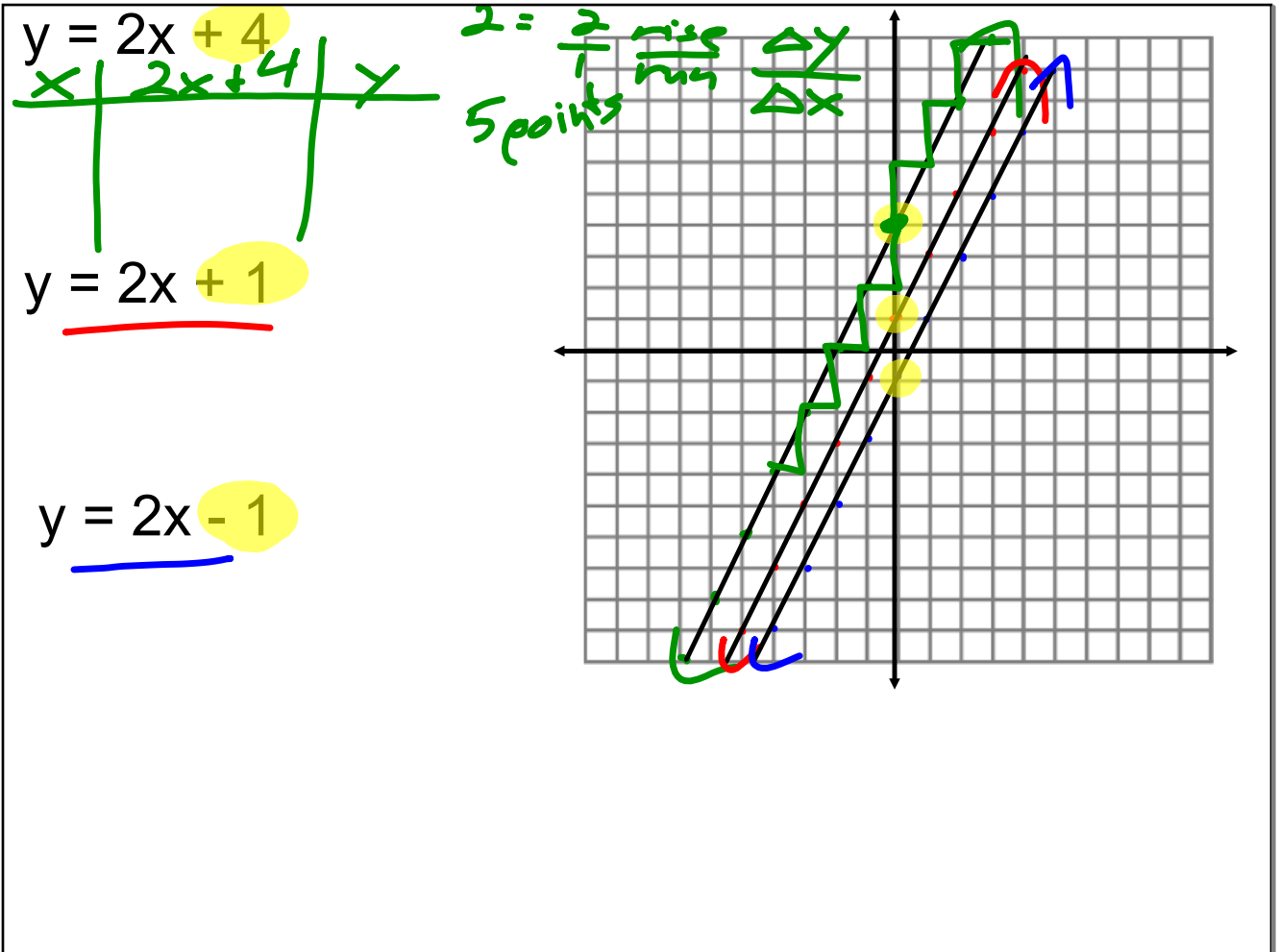
x	$-2x-5$	y
0	$-2(0)-5$	-5
1	$-2(1)-5$	-7

$$\frac{-7-(-5)}{1-0} = \frac{-2}{1} = -2$$

3) $y = \left(\frac{2}{3}\right)x$

x	$\frac{2}{3}x$	y
0	$\frac{2}{3}(0)$	0
3	$\frac{2}{3}(3)$	2

$$\frac{2-0}{3-0} = \frac{2}{3}$$



Slope-intercept Form

$$y = mx + b$$
$$y = 2x + 5$$

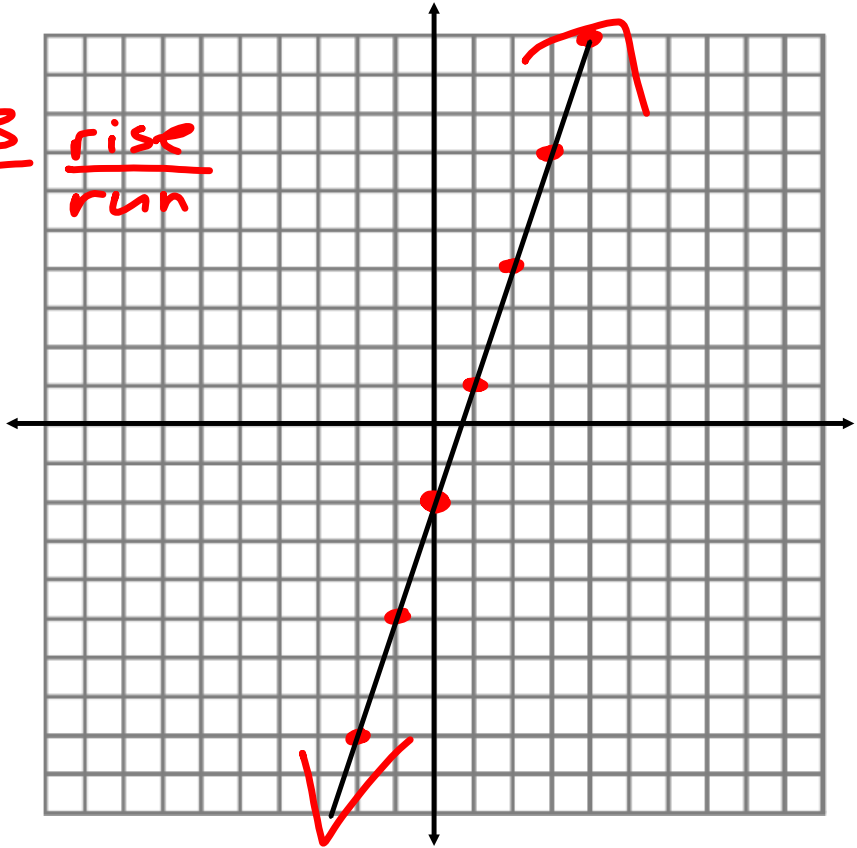
m = slope

b = y-intercept
(the point at which the line intersects the y-axis)

$$y = 3x - 2$$

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

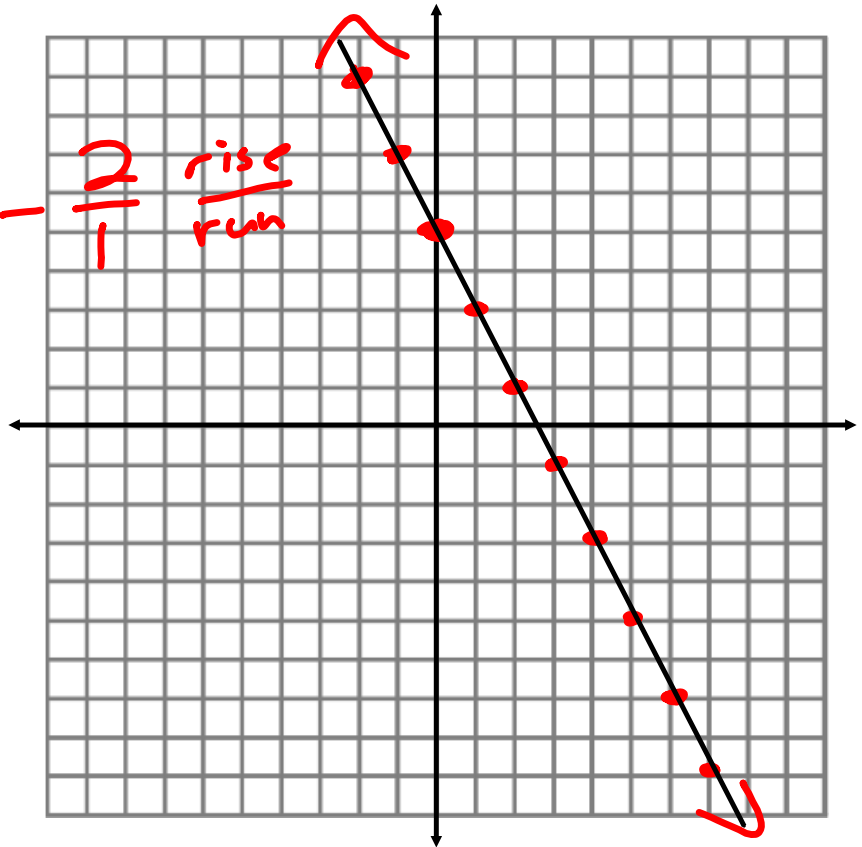
$$b = -2$$



$$y = -2x + 5$$

$$m = -2 = -\frac{2}{1} \quad \begin{array}{l} \text{rise} \\ \hline \text{run} \end{array}$$

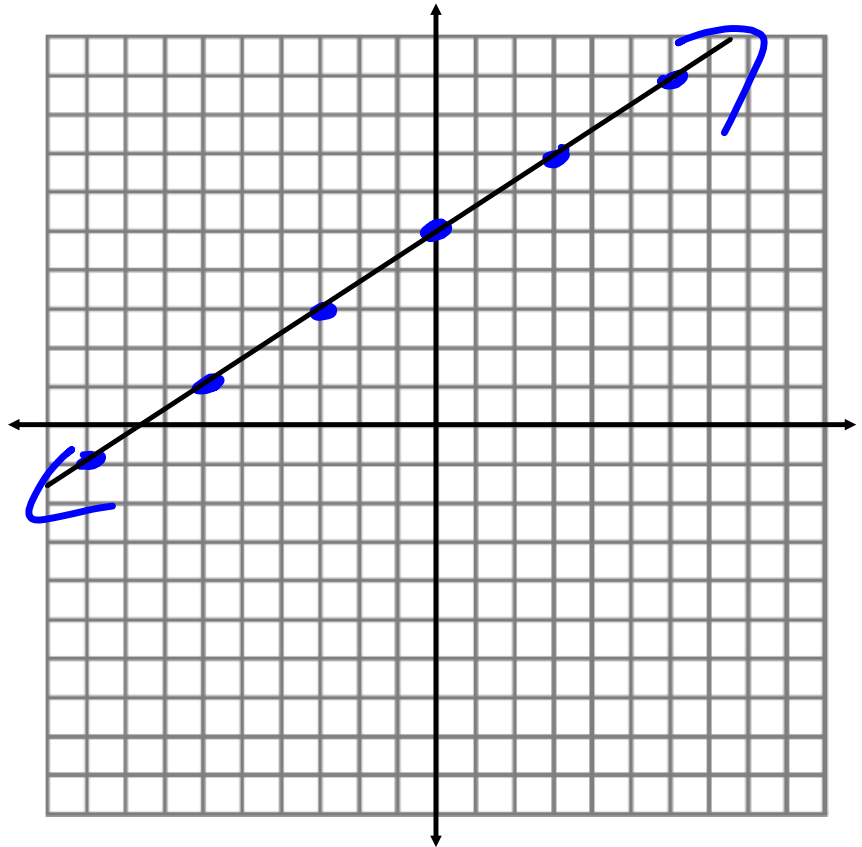
$$b = 5$$

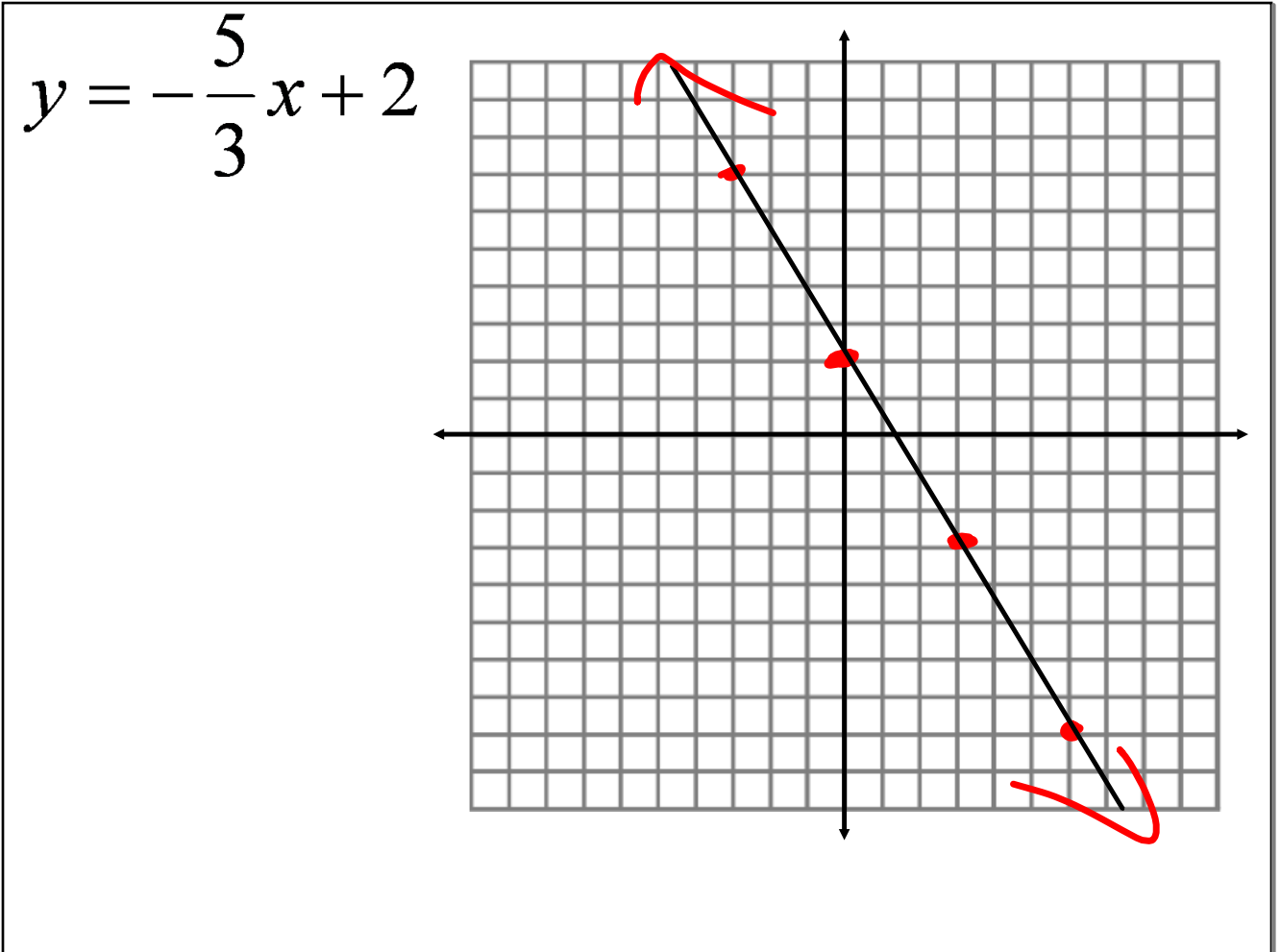


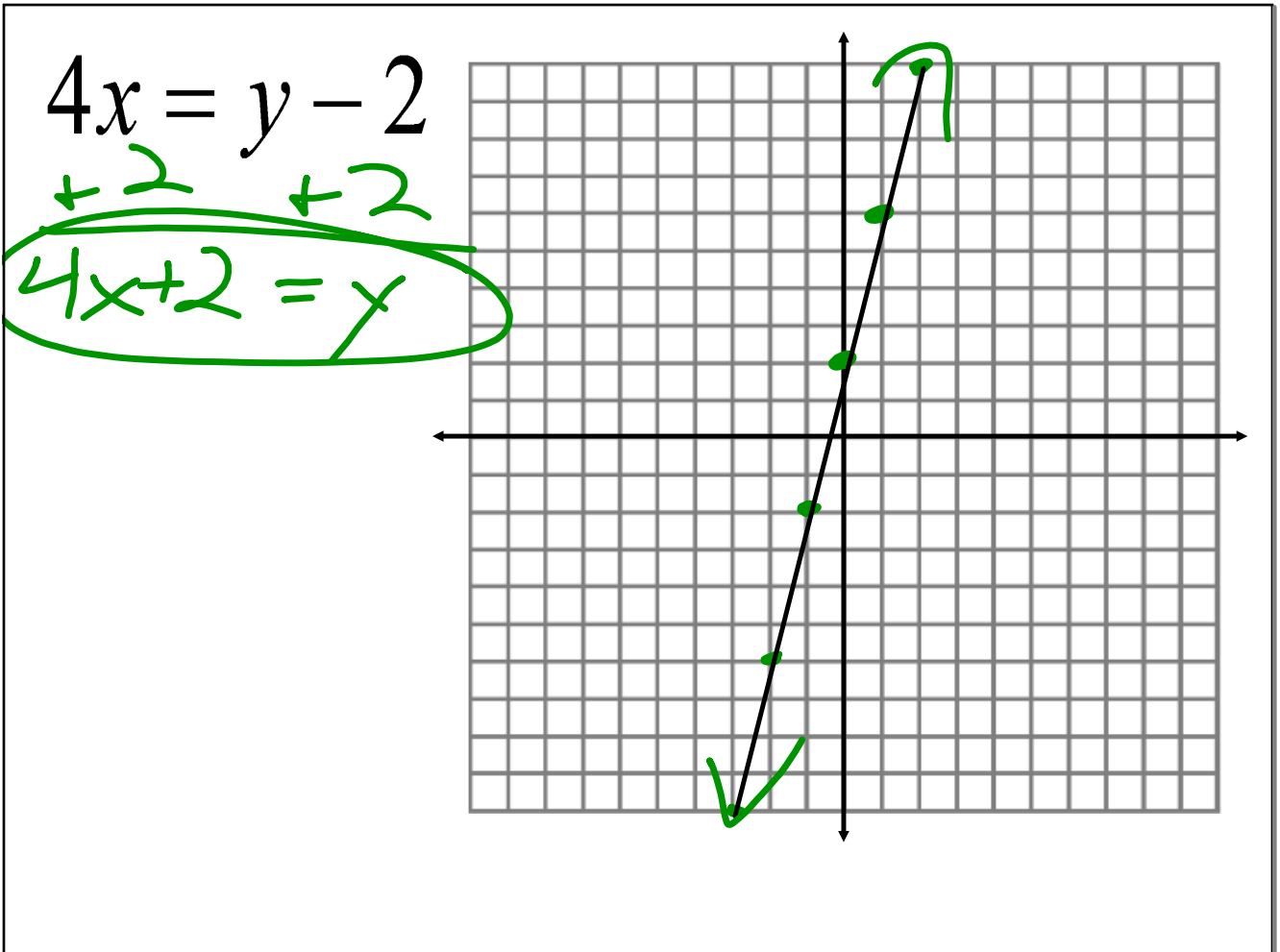
$$y = \frac{2}{3}x + 5$$

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

$$b = 5$$







$$1) y = -\frac{3}{2}x - 3$$

$$2) y = 3x + 5$$

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

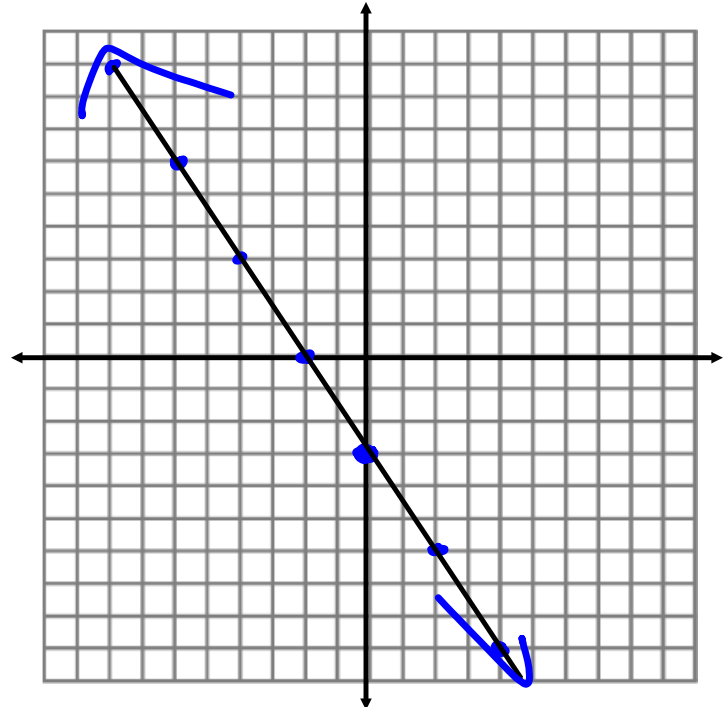
$$4) y = \frac{4}{5}x - 1$$

$$5) y + 5x = 1$$

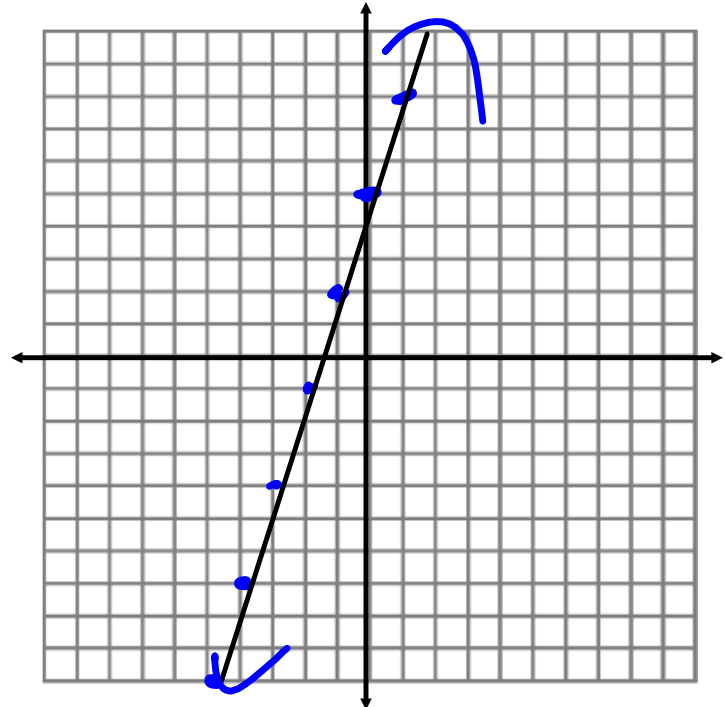
$$6) y = x$$

$$7) 6 = y - 4x$$

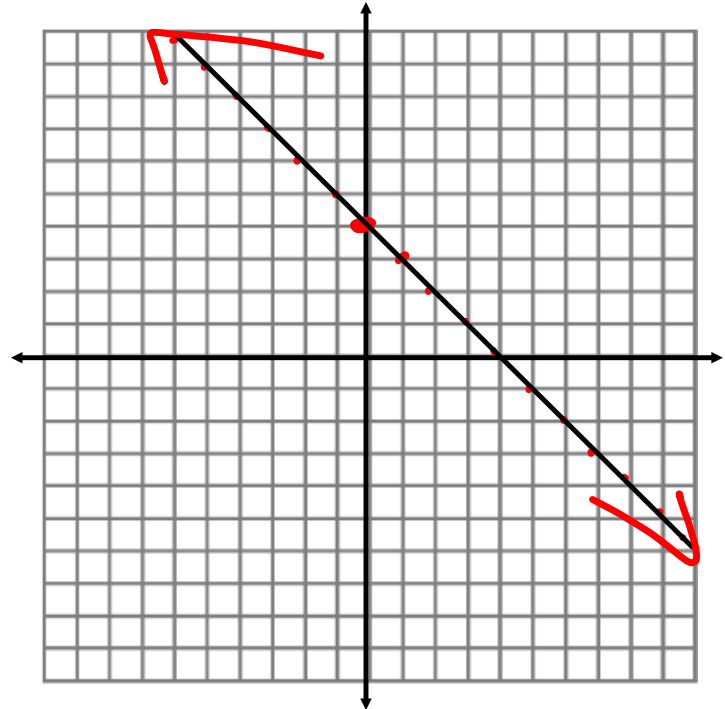
$$1) y = -\frac{3}{2}x - 3$$



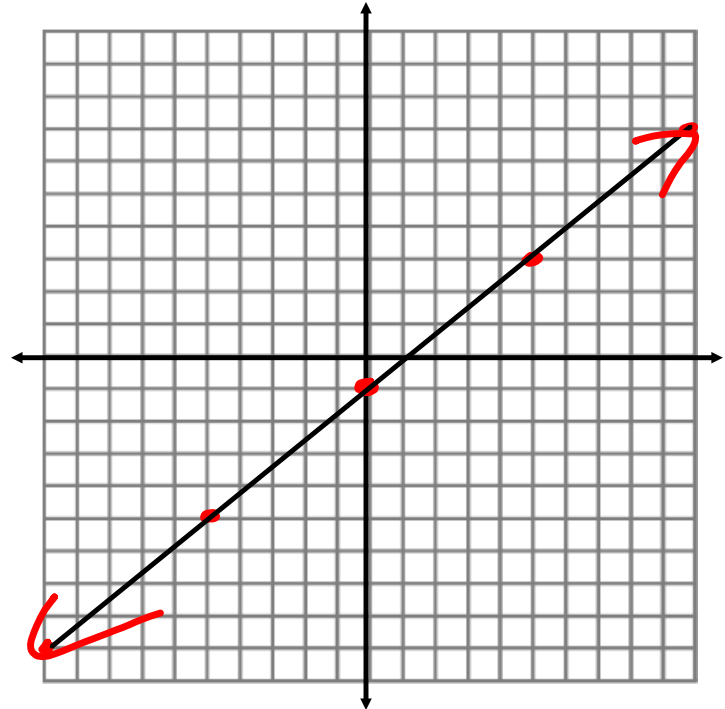
2) $y = 3x + 5$



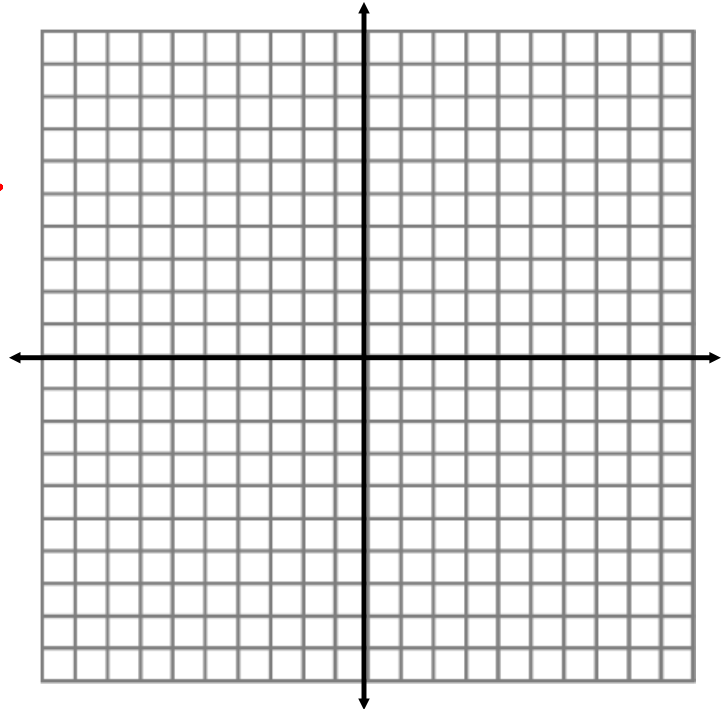
3) $y = -x + 4$



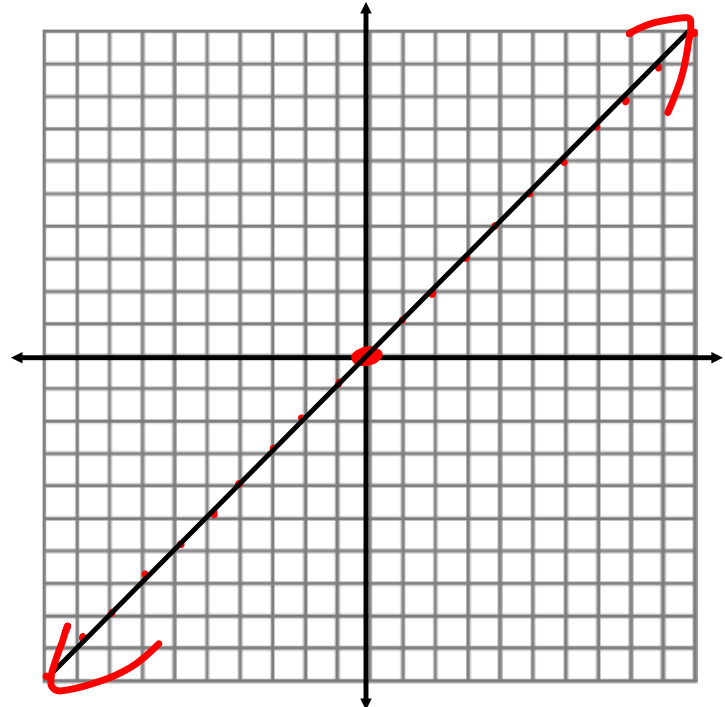
$$4) y = \frac{4}{5}x - 1$$



$$\begin{array}{r} 5) \quad y + 5x = 1 \\ \quad -5x - 5x \\ \hline \quad y = -5x + 1 \end{array}$$



6) $y = x$



$$7) 6 = y - 4x$$

