

## 5.4 Quiz Review

## Answer Key

$$1) m = \frac{\text{rise}}{\text{run}} = \frac{-2}{7}$$

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

$$3) m = \frac{\text{rise}}{\text{run}} = \frac{-7}{2}$$

$$4) m = \frac{\text{rise}}{\text{run}} = \frac{3}{1}$$

$$5) \begin{matrix} (2, -12) \\ (14, -4) \end{matrix} \frac{\Delta y}{\Delta x} = \frac{-12 - (-4)}{2 - 14} = \frac{-8}{-12} = \frac{2}{3}$$

$$6) \begin{matrix} (-15, -18) \\ (8, -18) \end{matrix} \frac{\Delta y}{\Delta x} = \frac{-18 - (-18)}{-15 - 8} = \frac{0}{-23} = 0$$

$$7) \begin{matrix} (-16, 15) \\ (-9, 3) \end{matrix} \frac{\Delta y}{\Delta x} = \frac{15 - 3}{-16 - (-9)} = \frac{12}{-7}$$

$$8) \begin{matrix} (-7, 10) \\ (-7, -20) \end{matrix} \frac{\Delta y}{\Delta x} = \frac{10 - (-20)}{-7 - (-7)} = \frac{30}{0} = \text{undefined}$$

$$9) \begin{matrix} (3, -3) \\ (12, -13) \end{matrix} \frac{\Delta y}{\Delta x} = \frac{-3 - (-13)}{3 - 12} = \frac{10}{-9}$$

$$10) \begin{matrix} (15, -10) \\ (6, 8) \end{matrix} \frac{\Delta y}{\Delta x} = \frac{-10 - 8}{15 - 6} = \frac{-18}{9} = -2$$

$$11) m=1, b=-5 \quad 12) m=1, b=0$$

$$13) m=3, b=0 \quad 14) m=\frac{1}{2}, b=1$$

$$15) m=-\frac{1}{4}, b=-3 \quad 16) m=2, b=4$$

$$17) m=1, b=2 \quad 18) m=3, b=4$$

$$19) \begin{matrix} (13, -14) \\ (14, -14) \end{matrix} m = \frac{\Delta y}{\Delta x} = \frac{-14 - (-14)}{13 - 14} = \frac{0}{-1} = 0$$

SKIP

$$\begin{aligned} y &= mx + b \\ y &= 0x + b \\ -14 &= 0(13) + b \\ -14 &= 0 + b \\ -14 &= b \end{aligned}$$

$$\begin{aligned} y &= mx + b \\ y &= 0x + -14 \\ y &= -14 \end{aligned}$$

$$20) \begin{matrix} (17, 19) \\ (-3, 9) \end{matrix} m = \frac{\Delta y}{\Delta x} = \frac{19 - 9}{17 - (-3)} = \frac{10}{20} = \frac{1}{2}$$

$$\begin{aligned} y &= mx + b \\ y &= \frac{1}{2}x + b \\ 9 &= \frac{1}{2}(-3) + b \\ 9 &= -\frac{3}{2} + b \\ -\frac{21}{2} &= -\frac{3}{2} + b \\ 4\frac{4}{2} &= b \end{aligned}$$

$$\begin{aligned} y &= mx + b \\ y &= \frac{1}{2}x + 4\frac{4}{2} \end{aligned}$$

$$21) \begin{matrix} (-16, -18) \\ (-7, 3) \end{matrix} \quad m = \frac{\Delta y}{\Delta x} = \frac{-18 - 3}{-16 - (-7)} = \frac{-21}{-9} = \frac{7}{3}$$

$$y = mx + b$$

$$y = \frac{7}{3}x + b$$

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

$$3 = -\frac{49}{3} + b$$

$$+\frac{49}{3} \quad +\frac{49}{3}$$

$$19\frac{1}{3} = b$$

$$y = mx + b$$

$$y = \frac{7}{3}x + 19\frac{1}{3}$$

$$22) \begin{matrix} (15, 3) \\ (-2, -14) \end{matrix} \quad m = \frac{\Delta y}{\Delta x} = \frac{3 - (-14)}{15 - (-2)} = \frac{17}{17} = 1$$

$$y = mx + b$$

$$y = 1x + b$$

$$3 = 1(15) + b$$

$$3 = 15 + b$$

$$-15 \quad -15$$

$$-12 = b$$

$$y = mx + b$$

$$y = 1x + -12$$

$$23) \begin{matrix} (11, -5) \\ (12, -9) \end{matrix} \quad m = \frac{\Delta y}{\Delta x} = \frac{-5 - (-9)}{11 - 12} = \frac{4}{-1} = -4$$

$$y = mx + b$$

$$y = -4x + b$$

$$-9 = -4(12) + b$$

$$-9 = -48 + b$$

$$+48 \quad +48$$

$$39 = b$$

$$y = mx + b$$

$$y = -4x + 39$$

$$24) \begin{matrix} (13, -3) \\ (-3, -19) \end{matrix} m = \frac{\Delta y}{\Delta x} = \frac{-3 - (-19)}{13 - (-3)} = \frac{16}{16} = 1$$

$$\begin{aligned} y &= mx + b \\ y &= 1x + b \\ -19 &= 1(-3) + b \\ -19 &= -3 + b \\ +3 &+3 \\ -16 &= b \end{aligned}$$

$$\begin{aligned} y &= mx + b \\ y &= 1x + -16 \end{aligned}$$

$$25) \begin{matrix} (6, -13) \\ (9, 11) \end{matrix} m = \frac{\Delta y}{\Delta x} = \frac{-13 - 11}{6 - 9} = \frac{-24}{-3} = 8$$

$$\begin{aligned} y - y_1 &= m(x - x_1) \\ y + 13 &= 8(x - 6) \\ \text{OR} \\ y - 11 &= 8(x - 9) \end{aligned}$$

$$\begin{aligned} y - 11 &= 8(x - 9) \\ y - 11 &= 8x - 72 \\ +11 &+11 \\ y &= 8x - 61 \end{aligned}$$

$$25) y - y_1 = m(x - x_1) \quad (16, 5)$$

$$26) \begin{matrix} (16, 5) \\ (12, 9) \end{matrix} m = \frac{\Delta y}{\Delta x} = \frac{5 - 9}{16 - 12} = \frac{-4}{4} = -1$$

$$\begin{aligned} y - 5 &= -1(x - 16) \\ \text{OR} \\ y - 9 &= -1(x - 12) \end{aligned}$$

$$\begin{aligned} y - 9 &= -1(x - 12) \\ y - 9 &= -x + 12 \\ +9 &+9 \\ y &= -x + 21 \end{aligned}$$

$$27) y - y_1 = m(x - x_1) \quad \begin{matrix} (-3, -6) \\ (7, -18) \end{matrix} \quad m = \frac{\Delta y}{\Delta x} = \frac{-6 - (-18)}{-3 - 7} = \frac{-6}{5}$$

$$y + 6 = -\frac{6}{5}(x + 3)$$

or

$$y + 18 = -\frac{6}{5}(x - 7)$$

$$y + 6 = -\frac{6}{5}(x + 3)$$

$$y + 6 = -\frac{6}{5}x + \frac{-18}{5}$$

$$y = -\frac{6}{5}x + 9\frac{3}{5}$$

$$28) y - y_1 = m(x - x_1) \quad \begin{matrix} (-20, -8) \\ (4, -16) \end{matrix} \quad m = \frac{\Delta y}{\Delta x} = \frac{-8 - (-16)}{-20 - 4} = \frac{8}{-24} = \frac{-1}{3}$$

$$y + 8 = -\frac{1}{3}(x + 20)$$

or

$$y + 16 = -\frac{1}{3}(x - 4)$$

$$y + 16 = -\frac{1}{3}(x - 4)$$

$$y + 16 = -\frac{1}{3}x + \frac{4}{3}$$

$$y = -\frac{1}{3}x + -14\frac{2}{3}$$

$$29) \text{rate of change} = \frac{2}{1}$$

Explanation: The hockey team's offense scores 2 goals per game.

$$30) \text{rate of change} = \frac{28}{1}$$

Explanation: The car can travel 28 miles per gallon.

\* All graphs are at the back.

$$y = Kx$$

$$36) \frac{12x = -36y}{-36}$$

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

or

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

Yes, it is a direct variation.

$$K = -\frac{1}{3}$$

$$y = Kx$$

$$37) \frac{y - 12 = 12x}{+12} \quad +12$$

$$y = 12x + 12$$

No, it is not a direct variation.

$$38) y = Kx$$

$$-11 + 9y + 7 = 2x$$

$$9y = 2x$$

9

$$y = \frac{2}{9}x$$

Yes, it is a direct variation

$$K = \frac{2}{9}$$

$$39) y = Kx$$

$$5x + 12.5y = 0$$

-5x

-5x

$$12.5y = -5x$$

12.5

$$y = -\frac{2}{5}x$$

Yes, it is a direct variation

$$K = -\frac{2}{5}$$

$$40) \quad y = Kx$$

$$\frac{(2)}{5} = K(5)$$

$$\frac{2}{5} = K$$

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

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

$$y = \frac{2}{5}(8)$$

$$y = 3\frac{1}{5}$$

$$41) \quad y = Kx$$

$$\frac{9.92}{12.8} = K(12.8)$$

$$0.775 = K$$

$$y = 0.775x$$

$$y = 0.775(8)$$

$$y = 6.2$$

$$42) \quad y = Kx$$

$$\frac{1.85}{0.925} = K(0.925)$$

$$2 = K$$

$$y = 2x$$

$$y = 2x$$

$$y = 2(8)$$

$$y = 16$$

$$43) \quad y = Kx$$

$$\frac{1\frac{2}{9}}{3\frac{2}{3}} = K(3\frac{2}{3})$$

$$1\frac{2}{9} \div 3\frac{2}{3} = K$$

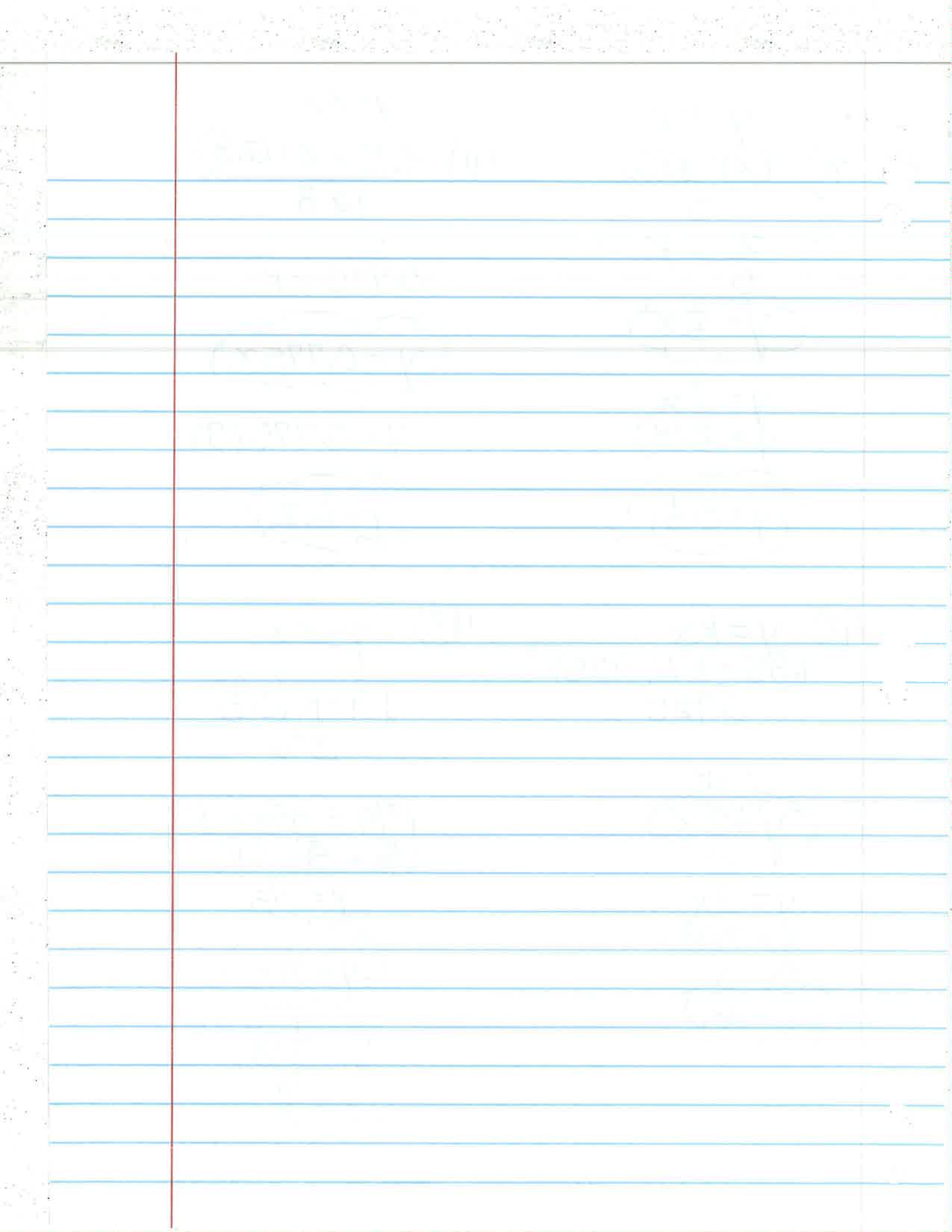
$$\frac{1\frac{2}{9}}{3\frac{2}{3}} \cdot \frac{3}{1} = K$$

$$K = \frac{1}{3}$$

$$y = \frac{1}{3}x$$

$$y = \frac{1}{3}(8)$$

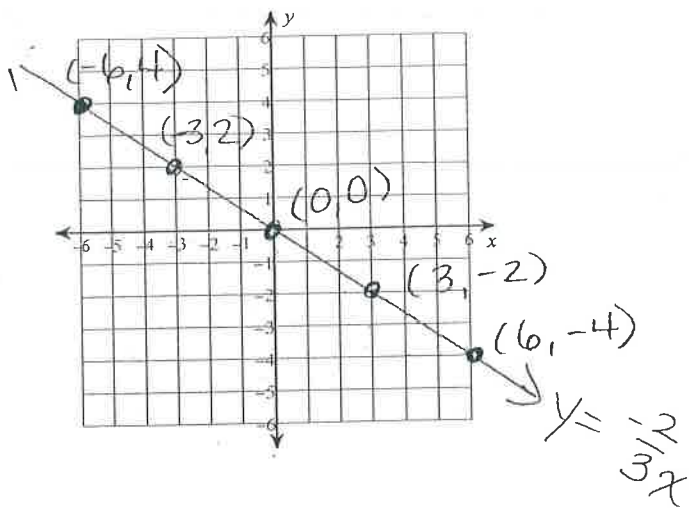
$$y = \frac{8}{3}$$



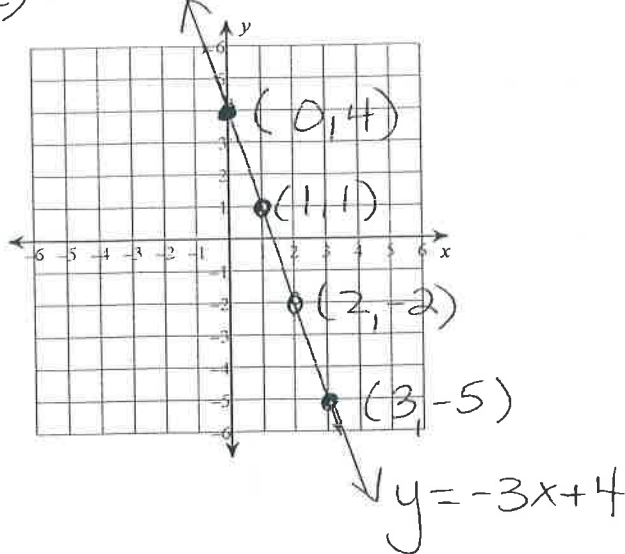


Graph each equation. Do not forget all the rules of graphing. (Give me 5!)

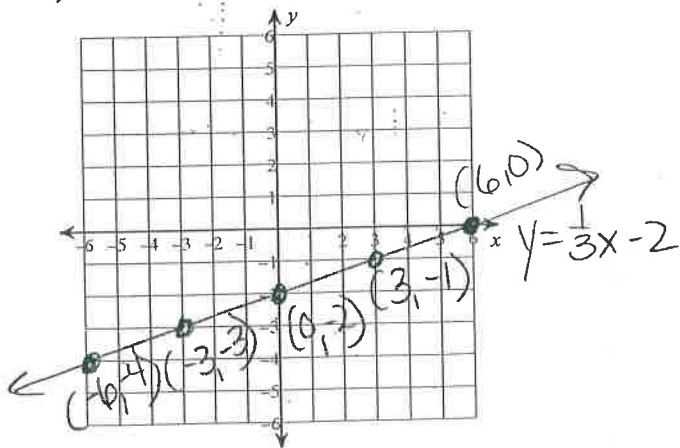
51)  $y = -\frac{2}{3}x$



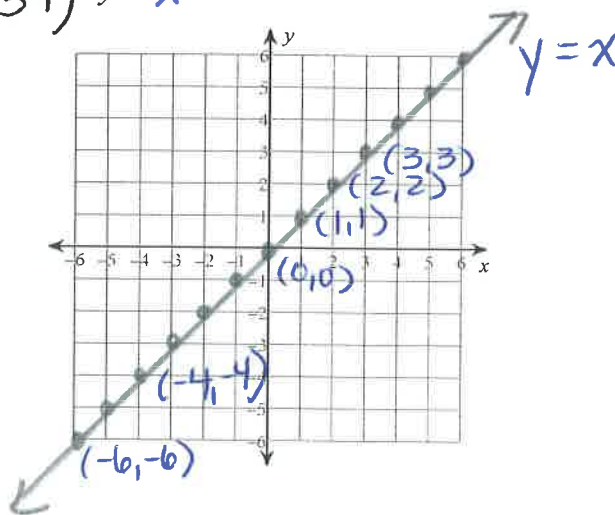
32)  $y = -3x + 4$



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



34)  $y = x$



35)

