

Name: _____

Show work needed to justify your answer.

Date: _____

HW: # 8: Math IBSL - Standard 8 - Linear Functions

5 points

2. Find the equation, in gradient-intercept form, of the following lines:

- a the line that passes through the point $(0, -1)$ and is parallel to the line $y = 4x - 3$
 b the line that passes through the points $(-3, -2)$ and $(1, 10)$

$$a) \boxed{y = 4x - 1}$$

$$b) \boxed{y = 3x + 7}$$

$$m = \frac{10 - (-2)}{1 - (-3)} = \frac{12}{4} = 3$$

$$y - 10 = 3(x - 1) \rightarrow y - 10 = 3x - 3$$

- 3 Consider the line passing through the points $(-3, -4)$ and $(-5, 2)$.

- a Find the gradient of the line.
 b Write down two different equations for the line in point-gradient form.
 c Verify that the two equations represent the same line.

$$b) y - 2 = -3(x + 5)$$

Ans

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

$$a) m = \frac{2 - (-4)}{-5 - (-3)} = \frac{6}{-2} = \boxed{-3}$$

$$c) y - 2 = -3x - 15$$

$$\boxed{y = -3x - 13}$$

$$\left. \begin{array}{l} \text{same} \\ y + 4 = -3x - 9 \end{array} \right\}$$

$$\boxed{y = -3x - 13}$$

4. Write the equation of each of these lines in the general form $ax + by + d = 0$ where a , b and d are integers.

a $y = \frac{1}{6}x - 3$

- b The line with gradient $-\frac{2}{3}$ and y-intercept $(0, 4)$.

- c The line with gradient -1 that passes through $(-3, 2)$.

$$a) 6y = x - 18$$

$$\boxed{x - 6y - 18 = 0}$$

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

$$3y = -2x + 12$$

$$\boxed{2x + 3y - 12 = 0}$$

$$(c) y - 2 = -1(x + 3)$$

$$y - 2 = -x - 3$$

$$\boxed{x + y + 1 = 0}$$