

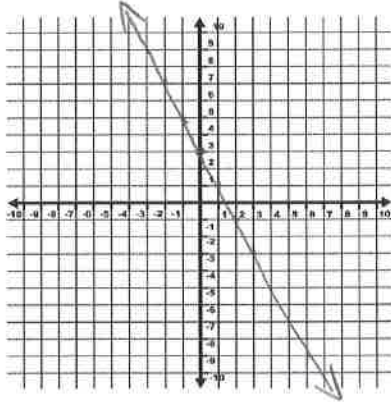
**Quiz - Linear Relations**

**PART 1 - Graph (1 mark each)**

1.  $y = -2x + 3$

$m = -2$

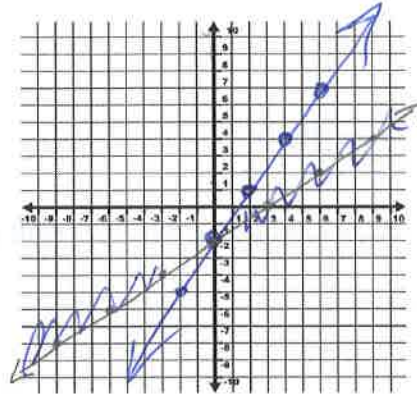
$b = 3$



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

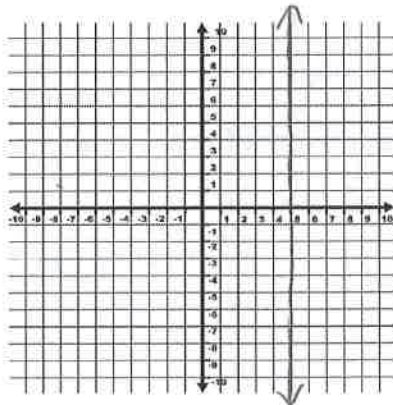
$m = \frac{3}{2}$

$b = -2$



3.  $x = 5$

$m = \text{undef}$

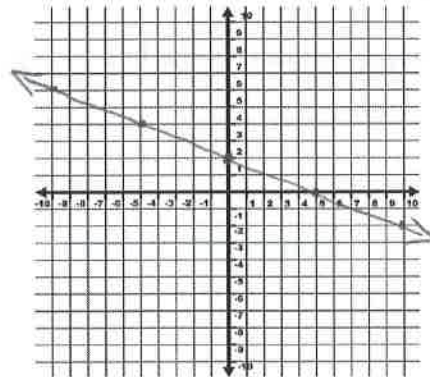


4.  $2x + 5y - 10 = 0$

$5y = -2x + 10$   
 $\frac{5y}{5} = \frac{-2x + 10}{5}$

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

$b = 2$



**PART 2 - Isolate 'y' (2 marks each)**

1.  $8x + 4y = 12$

$\frac{4y}{4} = \frac{12 - 8x}{4}$

$y = 3 - 2x$

$m = -2$

$b = 3$

2.  $5y - 7x = 35$

$\frac{5y}{5} = \frac{35 + 7x}{5}$

$y = \frac{7}{5}x + 7$

$m = \frac{7}{5}$

$b = 7$

**PART 3 - Find X & Y Intercepts (1 mark each)**

1.  $4x + 6y - 18 = 0$

$\frac{4x}{4} = \frac{18}{4}$

$\frac{6y}{6} = \frac{18}{6}$

$y_{int} = (0, 3)$

$x_{int} = (\frac{9}{2}, 0) / (4.5, 0)$

2.  $5x - 2y = 20$

$\frac{-2y}{-2} = \frac{20}{-2}$

$y_{int} = (0, -10)$

$x_{int} = (4, 0)$

PART 4 - Write the equation in slope-intercept form  $y = mx + b$

(1 mark each)

1.  $y = 2x + b$  with (4,12)

$$y_2 - y_1 = m(x_2 - x_1)$$

$$y - 12 = 2(x - 4)$$

$$y - 12 = 2x - 8$$

$$y = 2x + 4$$

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

with (-6,-2)

$$y + 2 = -\frac{4}{3}(x + 6)$$

$$y + 2 = -\frac{4}{3}x - 8$$

$$y = -\frac{4}{3}x - 10$$

PART 5 - Write the equation in GENERAL FORM

$Ax + By + C = 0$

(1 mark each)

1.  $-5y = 3 - 4x$

$$4x - 5y - 3 = 0$$

2.  $(5y - 6 = \frac{3}{4}x) \times 4$

$$20y - 24 = 3x$$

$$3x - 20y + 24 = 0$$

PART 6 - Write equation of the line in 3 forms

(3 marks each)

1. (4,5)  $m = -1$

i) point-slope

$$y - 5 = -(x - 4)$$

$$y - 5 = -x + 4$$

ii) slope-intercept

$$y = -x + 9$$

iii) general form

$$x + y - 9 = 0$$

i) point - slope form:  $y - y_1 = m(x - x_1)$

ii) slope-intercept form:  $y = mx + b$

iii) general form:  $Ax + By + C = 0$

2. (-6,10)  $m = \frac{2}{5}$

i) point-slope

$$y - 10 = \frac{2}{5}(x + 6)$$

ii) slope-intercept

$$y - 10 = \frac{2}{5}x + \frac{12}{5}$$

$$y = \frac{2}{5}x + 12.4$$

iii) general form

$$5y = 2x + 62$$

$$0 = 2x - 5y + 62$$