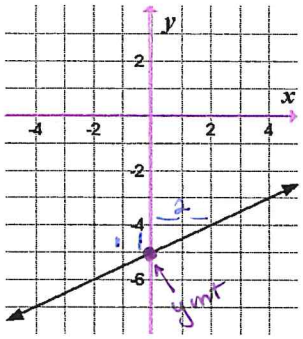
FINDING EQUATIONS OF LINES

1. For each graph below, give i) the slope, ii) the y-intercept, and iii) the equation.

a)

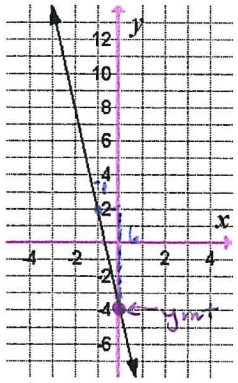


m = $\frac{1}{2}$

y-int = -5

equation: $y = \frac{1}{2}x - 5$

b)



m = $\frac{-6}{1}$

y-int = -4

equation: $y = -6x - 4$

2. Use the given information to write the equation of each line in the form $y = mx + b$.

a) Slope = -3 and y-intercept = -2 equation: $y = -3x - 2$

b) $m = 4$ and $b = 3$ equation: $y = 4x + 3$

c) parallel to $y = 3x - 5$ and y-intercept = 8 equation: $y = 3x + 8$

d) parallel to $y = 5$ and y-intercept = -3 equation: $y = -3$

$m = 0$

3. Use the given information to write the equation of each line.

a) slope = -2, through the point (0, 0)

m x y

$y = mx + b$

$0 = -2(0) + b$

$0 = 0 + b$

$0 = b$

$\therefore y = -2x + 0$

$y = -2x$

b) $m = \frac{1}{3}$, through the point (6, -2)

x y

$y = mx + b$

$-2 = \frac{1}{3}(6) + b$

$-2 = \frac{6}{3} + b$

$-2 = 2 + b$

$-2 - 2 = b$

$-4 = b$

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

c) $m = 4$, through the point (4, 8)

x y

$y = mx + b$

$8 = 4(4) + b$

$8 = 16 + b$

$8 - 16 = b$

$-8 = b$

$\therefore y = 4x - 8$

4) Graph the lines from Q3 to check your work.