

Parallel Lines

$$y = mx + c$$

↑
gradient

↑
y-intercept

Find eqn of line parallel to

$$y = 3x - 4 \quad \text{passing through } (2, 7)$$

Line is of the form

$$y = 3x + c$$

Sub
(2, 7)

$$7 = 3(2) + c$$

$$7 = 6 + c$$

$$7 - 6 = c$$

$$1 = c$$

Line is $y = 3x + 1$

Exercise

1) Find eqn of line parallel to $y = \frac{1}{2}x + 4$ passing through $(4, 9)$

Line is of form $y = \frac{1}{2}x + c$

Sub $(4, 9)$

$$9 = \frac{1}{2}(4) + c$$

$$9 = 2 + c$$

$$9 - 2 = c$$

$$7 = c$$

$$\underline{y = \frac{1}{2}x + 7}$$

2) Find eqn of line parallel to $y = -2x - 3$ passing through $(1, 7)$

Line is of form $y = -2x + c$

Sub $(1, 7)$

$$7 = -2(1) + c$$

$$7 = -2 + c$$

$$7 + 2 = c$$

$$9 = c$$

$$\underline{y = -2x + 9}$$