

A line parallel to $y = mx + c$ has gradient m .

A line perpendicular to $y = mx + c$ has gradient $-\frac{1}{m}$.

Parallel & Perpendicular Lines (A)

Find the equation of the line parallel to $y = -x + 5$ and passing through $(4, 2)$.

↑
gradient = -1

$$y = mx + c$$

$$m = -1$$

$$y = -x + c$$

Substitute $(4, 2)$:

$$4 = -2 + c$$

$$c = 6$$

$$y = -x + 6$$

Find the equation of the line perpendicular to $y = 4x - 8$ and passing through $(0, 6)$.

↑
gradient = 4

$$y = mx + c$$

$$m = -\frac{1}{4}$$

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

Substitute $(0, 6)$:

$$6 = -\frac{1}{4}(0) + c$$

$$c = 6$$

$$y = -\frac{1}{4}x + 6$$