

Task 1

Step 1 x_1 y_1 x_2 y_2
(0,2.25) (4.5,0)

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{0 - 2.25}{4.5 - 0} = \frac{-2.25}{4.5} = -\frac{1}{2} \quad \text{gradient} = -0.5$$

①

Step 2

$$y = mx + c \quad \text{gradient} = -0.5 \quad 2.25 = -0.5(0) + c \quad 2.25 = 0 + c \quad c = 2.25$$

$$y = -0.5x + 2.25 \quad \text{equation of line}$$

③

Step 3

$$\frac{-4.5}{-2.25} \quad (4,1)$$

Perpendicular line equation

$$y = mx + c \quad \text{gradient} = 2$$

②