

Finding Equations from Two Points

Find the gradients and equations of the straight lines through these pairs of points. Give your answers in the form $y = mx + c$

- (a) (0, 0) and (2, 8)
- (b) (0, 0) and (8, 2)
- (c) (3, 0) and (5, 6)
- (d) (3, 0) and (5, 5)
- (e) (0, 8) and (4, 0)
- (f) (1, 5) and (3, 1)

$$(a) m = 4 \quad y = 4x$$

$$(b) m = \frac{1}{4} \quad y = \frac{1}{4}x$$

$$(c) m = 3 \quad y = 3x - 9$$

$$(d) m = \frac{5}{2} \quad y = \frac{5}{2}x - \frac{15}{2}$$

$$(e) m = -2 \quad y = -2x + 8$$

$$(f) m = -2 \quad y = -2x + 7$$

Find the gradients and equations of the straight lines through these pairs of points. Give your answers in the form $ax + by = c$ where a , b and c are integers.

- (a) (0, 0) and (4, 2)
- (b) (0, 1) and (4, 3)
- (c) (0, 1) and (3, 2)
- (d) (3, 3) and (9, -3)
- (e) (2, 4) and (-2, 16)
- (f) (4, 4) and (-8, -2)

$$(a) m = \frac{1}{2} \quad x - 2y = 0$$

$$(b) m = \frac{1}{2} \quad x - 2y = -2$$

$$(c) m = \frac{1}{3} \quad x - 3y = -3$$

$$(d) m = -1 \quad x + y = 6$$

$$(e) m = -3 \quad 3x + y = 10$$

$$(f) m = \frac{1}{2} \quad x - 2y = -4$$

A line L passes through the points A (2, 5) and B (4, 9). Find the equation of the line.

Another line M is perpendicular to line L and passes through B. Find the equation of this line.

$$y = 2x + 1$$

$$y = -\frac{1}{2}x + 11$$

A straight line passes through the points (-4, 7), (6, -5) and (8, t). Use an algebraic method to find the value of t.

$$\text{Equation } y = -\frac{6}{5}x + \frac{11}{5}$$

$$t = -\frac{37}{5} = -7.4$$