

The Equation of a Straight Line

The equation of the straight line with gradient m passing through the point (a, b) is

$$y - b = m(x - a)$$

- Find the equation of the straight line through the point $(1, 5)$ with gradient 2.
- Find the equation of the straight line through the given point and with the given gradient.
 - point $(2, 10)$, gradient 3
 - point $(4, 6)$, gradient 2
 - point $(-5, -4)$, gradient 2
 - point $(1, 3)$, gradient 4
 - point $(2, 1)$, gradient 3
 - point $(2, 6)$, gradient 5
 - point $(-1, 4)$, gradient 2
 - point $(-3, -5)$, gradient 4
 - point $(-2, -5)$, gradient 3
 - point $(1, 3)$, gradient -2
 - point $(3, 1)$, gradient -3
 - point $(1, -3)$, gradient 4
 - point $(2, 5)$, gradient 4
 - point $(4, 3)$, gradient -2
 - point $(1, -2)$, gradient -6
 - point $(-2, -1)$, gradient 3
- Find the equation of the straight line through the point $(3, -2)$ with gradient:
 - 2
 - 4
 - -3
 - 1
- Find the gradient of the line passing through the points $A(1, 2)$ and $B(3, 8)$.
 - Hence find the equation of the line AB .
- Find the gradient and then the equation of the line passing through each pair of points.
 - $(1, 4)$ and $(3, 8)$
 - $(2, 1)$ and $(4, 9)$
 - $(3, 2)$ and $(7, 10)$
 - $(1, 3)$ and $(6, 18)$
 - $(-2, -6)$ and $(1, 0)$
 - $(1, -1)$ and $(3, 7)$
 - $(2, 8)$ and $Q(5, 14)$
 - $(1, 8)$ and $(3, 4)$
 - $(1, 3)$ and $(4, 9)$
 - $(3, 7)$ and $(5, 1)$
 - $(-2, -1)$ and $(3, 9)$
 - $(-1, 1)$ and $F(2, 10)$
 - $(1, 8)$ and $(5, 0)$
 - $(2, -3)$ and $(8, 9)$
 - $(-4, 0)$ and $(1, 15)$
 - $(-1, 12)$ and $(2, -3)$

Answers

1. $y = 2x + 3$

2. (a) $y = 3x + 4$ (b) $y = 2x - 2$ (c) $y = 2x + 6$

(d) $y = 4x - 1$ (e) $y = 3x - 5$ (f) $y = 5x - 4$

(g) $y = 2x + 6$ (h) $y = 4x + 7$ (i) $y = 3x + 1$

(j) $y = -2x + 5$ (k) $y = -3x + 10$ (l) $y = 4x - 7$

(m) $y = 4x - 3$ (n) $y = -2x + 11$ (o) $y = -6x + 4$

(p) $y = 3x + 5$

3. (a) $y = 2x - 8$ (b) $y = 4x - 14$ (c) $y = -3x + 7$

(d) $y = x - 5$

4. (a) $m = 3$ (b) $y = 3x - 1$

5. (a) $y = 2x + 2$ (b) $y = 4x - 7$ (c) $y = 2x - 4$

(d) $y = 3x$ (e) $y = 2x - 2$ (f) $y = 4x - 5$

(g) $y = 2x + 4$ (h) $y = -2x + 10$ (i) $y = 2x + 1$

(j) $y = -3x + 16$ (k) $y = 2x + 3$ (l) $y = 3x + 4$

(m) $y = -2x + 10$ (n) $y = 2x - 7$ (o) $y = 3x + 12$

(p) $y = -5x + 7$