

Parallel and Perpendicular lines

- For each equation below write down the gradient and point of crossing the y-axis.
(a) $y = 2x + 5$ (b) $y = \frac{1}{2}x - 4$ (c) $y = \frac{2}{3}x$ (d) $2y = 4x + 6$
(e) $3y = 4x - 5$ (f) $2x + 3y = 2$ (g) $6x + 2y - 5 = 0$ (h) $2y - 4x - 1 = 0$
- Find the equation of the line **parallel** to the line $y = 3x - 2$ which passes through the point $(-1, 4)$.
- Find the equation of the line through the point $(-1, -4)$ which is **perpendicular** to the line with equation $2y = 4x - 5$.
- Find the equation of the line through the point $(2, 5)$ which is **parallel** to the line with equation $3x + 2y = 6$.
- A line has equation $4x + 3y - 4 = 0$. Find the equation of the line **perpendicular** to this line and which passes through $(0, -3)$.
- Find the equation of the line through $(-6, -4)$ which is **perpendicular** to the line with equation $x + 3y = -4$.
- A is the point $(-4, 8)$ and B is $(1, -3)$. Find the equation of the line through $(-2, 2)$ which is **perpendicular** to AB.
- M is the point $(-3, 0)$ and N is $(6, 6)$. Find the equation of the line through $(4, -1)$ which is **parallel** to the line MN.
- A triangle PQR is such that P is $(1, 1)$, Q is $(-2, -4)$ and R is $(11, -5)$. Show that this triangle is right-angled at P.