Exercise 1

Paper 1 style · No calculator

1 8 marks SL 2.1 ●●○ Typical

The line L_1 has equation $2x + 3y - 12 = 0$.

(a) Find the gradient of L_1. **[2]**

(b) Write down the coordinates of the points where L_1 meets the x-axis and the y-axis. **[2]**

The line L_2 is perpendicular to L_1 and passes through the origin.

(c) Find the equation of L_2. **[2]**

(d) Find the coordinates of the point where L_1 and L_2 meet. **[2]**

The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
© 2026 Hence

Exercise 1 — markscheme

Paper 1 style · No calculator

1 8 marks SL 2.1 ●●○ Typical

The line L_1 has equation $2x + 3y - 12 = 0$.

(a) Find the gradient of L_1. **[2]**

(b) Write down the coordinates of the points where L_1 meets the x-axis and the y-axis. **[2]**

The line L_2 is perpendicular to L_1 and passes through the origin.

(c) Find the equation of L_2. **[2]**

(d) Find the coordinates of the point where L_1 and L_2 meet. **[2]**

MARKSCHEME (a)

$3y = -2x + 12$ **(M1)**

$m = -\frac{2}{3}$ **A1**

Total 2 marks

MARKSCHEME (b)

$(6,\ 0)$ **A1**

$(0,\ 4)$ **A1**

Total 2 marks

MARKSCHEME (c)

gradient $\frac{3}{2}$ **(A1)**

$y = \frac{3}{2}x$ **A1**

Total 2 marks

MARKSCHEME (d)

$2x + 3\left(\frac{3}{2}x\right) = 12$ **(M1)**

$\left(\frac{24}{13},\ \frac{36}{13}\right)$ **A1**

Total 2 marks

Note Accept $(1.85,\ 2.77)$. FT from their L_2.