EQUATION OF A STRAIGHT LINE

1 Find the equation of the straight line with:

(a) gradient $\frac{3}{4}$, passing through $(-6, 5)$

(b) gradient $-\frac{1}{2}$, passing through $(4, -3)$

2 Find the equation of the straight line passing through:

(a) $(3, 3)$ and $(-4, -5)$

(b) $(2, -8)$ and $(7, 2)$

3 Find the equation of the straight line passing through:

(a) $(6, 6)$ with an angle of inclination of $45°$

(b) $(-2, 3)$ with an angle of inclination of $53° 8'$ $\left(\tan 53°8' \approx \frac{4}{3}\right)$

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4 Find the equation of the straight line parallel to the x-axis and passing through the point $(5, 2)$.

5 Find the equation of the straight line parallel to the y-axis and passing through the point $(-2, -4)$.

6 The equation of the straight line with x-intercept 2 and y-intercept -5 is:

A $2x - 5y - 10 = 0$ **B** $5x - 2y - 10 = 0$ **C** $2x - 5y + 10 = 0$ **D** $5x - 2y + 10 = 0$

8 Write each equation in the form $y = mx + c$ and find the gradient of each line.

(a) $2x + 3y = 4$ **(b)** $3x - 2y = 7$ **(c)** $2y = 6 - 3x$ **(d)** $5y - 2x = 8$

9 Indicate whether each statement is correct or incorrect for the line $2x + 3y - 12 = 0$.

(a) $m = -\frac{2}{3}$ **(b)** x-intercept $= 6$ **(c)** y-intercept $= -4$ **(d)** passes through $(3, 2)$

11 Find the equation of the line containing the point $(2, -3)$ that is:

(a) parallel to the line $3x + 2y - 6 = 0$ **(b)** perpendicular to the line $3x + 2y - 6 = 0$

13 The coordinates of two points A and B are $(0,-2)$ and $(3,0)$ respectively. The x-coordinate of a point C on the line AB is 6. Find:

(a) the equation of AB **(b)** the angle of inclination of AB

(c) the y-coordinate of C **(d)** the equation of the line through C that is perpendicular to AB.

14 Show that the line with equation $2x - y = 5$ is parallel to the line joining the points $(-1,5)$ and $(1,9)$.