GCSE HIGHER · REVISION MAT 5

Equations of straight lines

1 The line $y = 2x + c$ passes through (0, 6).

Write down the value of c.

2 Find the gradient of the line through (3, –1) and (7, 7).

3 Show that (1, 4), (2, 7) and (4, 13) lie on a straight line.

4 Find the equation of the line through (–2, 1) and (2, 9).

5 Write $5x - 2y = 10$ in the form $y = mx + c$.

Find where it crosses each axis.

6 A taxi charges a fixed fee plus a cost per km.

4 km costs £9.20
and 10 km costs £17.

How much does 15 km cost?

7 L1 is $3y = 2x + 6$.

L2 passes through (0, 4) and (2, 1).

Show that L1 and L2 are perpendicular.

8 A is (2, 3) and B is (8, 7).

Find where the perpendicular bisector of AB crosses the y-axis.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Equations of straight lines

1 $c = 6$

2 $\frac{8}{4}$

Gradient = 2

3 Gradient (1, 4) to (2, 7) = 3

Gradient (2, 7) to (4, 13) = $\frac{6}{2} = 3$

Same gradient through a shared point.

4 Gradient $\frac{8}{4} = 2$

$9 = 4 + c$

$y = 2x + 5$

5 $y = 2.5x - 5$

(0, –5) and (2, 0)

6 Gradient $\frac{17 - 9.20}{6} = 1.30$

Fixed fee 9.20 – 5.20 = £4

$C = 1.3k + 4$

£23.50

7 L1: gradient $\frac{2}{3}$

L2: gradient $\frac{-3}{2}$

$\frac{2}{3} \times \frac{-3}{2} = -1$

8 Midpoint (5, 5), gradient AB $\frac{2}{3}$

Perpendicular gradient $-\frac{3}{2}$

$5 = -7.5 + c$

(0, 12.5)

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