GCSE HIGHER · REVISION MAT 4

Equations of straight lines

1 Write down the y-intercept of

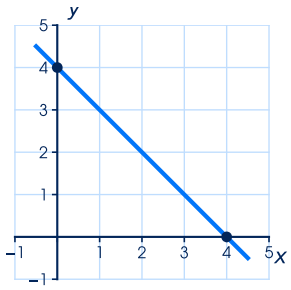
$y = 5x + 9$

2 Find the equation of the line with gradient -3 that passes through $(2, 1)$.

3 Ella says the gradient of $y = 5 - 3x$ is 5.

Is she correct? Explain.

4 Find where this line meets the line $y = x$.



5 Show that $(-2, 9)$ lies on the line through $(1, 3)$ and $(4, -3)$.

6 A is $(-3, 2)$ and B is $(5, 6)$.

M is the midpoint of AB.

Find the equation of the line through M with gradient -2.

7 Is the line $4y = x + 8$ perpendicular to $y = 8 - 4x$?

Explain.

8 ABCD is a square.
A is $(1, 2)$ and B is $(5, 4)$.

C lies above AB.

Find the equation of line BC and the coordinates of C.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

Equations of straight lines

1 **(0, 9)**

2 $1 = -6 + c$

$y = -3x + 7$

3 **No: the gradient is the coefficient of x, which is -3.**

4 Line: $y = -x + 4$

$x = -x + 4 \Rightarrow x = 2$

(2, 2)

5 Gradient $\frac{-6}{3} = -2$, $y = -2x + 5$

$x = -2$: $y = 4 + 5 = 9$ ✓

$(-2, 9)$ is on the line.

6 M = (1, 4)

$4 = -2 + c$

$y = -2x + 6$

7 Gradients $\frac{1}{4}$ and -4

$\frac{1}{4} \times (-4) = -1$, so yes.

8 Gradient AB = $\frac{1}{2}$, BC gradient -2

$y = -2x + 14$

AB = (4, 2), so step (−2, 4)

C = (3, 8)

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