GCSE HIGHER · REVISION MAT 2

Simultaneous equations

1 Solve

$$2x + y = 9$$
$$x + y = 6$$

2 Solve

$$5x - 2y = 11$$
$$3x + 2y = 13$$

3 Lee says the solution of

$$x + 3y = 11$$
$$x - y = 3$$

is $x = 4$, $y = 1$. Is Lee correct?

4 2 adult and 3 child tickets cost £39.

1 adult and 4 child tickets cost £37.

Find the cost of 3 adult and 2 child tickets.

5 Solve

$$3x - 4y = 18$$
$$2x + 3y = -5$$

6 Ian has 18 coins.

They are 20p and 50p coins, worth £6.30 in total.

How many of each coin does he have?

7 Solve

$$y = 2x$$
$$x^2 + y^2 = 45$$

8 A rectangle has a perimeter of 14 cm and an area of 12 cm^2.

Find the length of its diagonal.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 2

Simultaneous equations

1 $x = 3$

$x = 3$, $y = 3$

2 $8x = 24 \Rightarrow x = 3$

$x = 3$, $y = 2$

3 $4 + 3 = 7 \neq 11$, so no.

$4y = 8 \Rightarrow y = 2$

$x = 5$, $y = 2$

4 $2a + 3c = 39$, $a + 4c = 37$

$2a + 8c = 74 \Rightarrow 5c = 35$

$c = 7$, $a = 9$

£41

5 $9x - 12y = 54$

$8x + 12y = -20$

$17x = 34 \Rightarrow x = 2$

$x = 2$, $y = -3$

6 $t + f = 18$

$20t + 50f = 630$

$30f = 270 \Rightarrow f = 9$

9 of each coin

7 $x^2 + 4x^2 = 45$

$x^2 = 9 \Rightarrow x = \pm 3$

(3, 6) and (–3, –6)

8 $x + y = 7$, $xy = 12$

$x^2 - 7x + 12 = 0 \Rightarrow 3$ and 4

$\sqrt{3^2 + 4^2}$

Diagonal = 5 cm

Mr&Mrs MATHS