Solving simultaneous equations

Linear equations

1. June 2016 (3H) Q12

Solve the simultaneous equations $4x + 5y = 13$
$3x - 2y = 27$

Show clear algebraic working.

2. June 2016 (4HR) Q10

Solve $4x + 3y = 6$
$3x + 5y = -1$

Show clear algebraic working.

3. Jan 2017 (3HR) Q11

(a) Solve $7x + 2y = 16$
$5x - 2y = 20$

Show clear algebraic working.

4. Jan 2017 (4H) Q10

Solve the simultaneous equations

$$5x - 2y = 33$$

$$5x + 8y = 18$$

Show clear algebraic working.

5. June 2017 (3H) Q10

Solve the simultaneous equations

$$2x + 7y = 31$$
$$5x - 3y = 16$$

Show clear algebraic working.

$x =$ .....

$y =$ .....

(Total for Question 10 is 4 marks)

11. June 2018 (4HR) Q7

Solve the simultaneous equations

$$y = 4x$$
$$7x - y = -13.5$$

Show clear algebraic working.

$x =$ .....

$y =$ .....

(Total for Question 7 is 3 marks)

13. Jan 2019 (2H) Q5

Calvin has 12 identical rectangular tiles.
He arranges the tiles to fit exactly round the edge of a shaded rectangle, as shown in the diagram below.

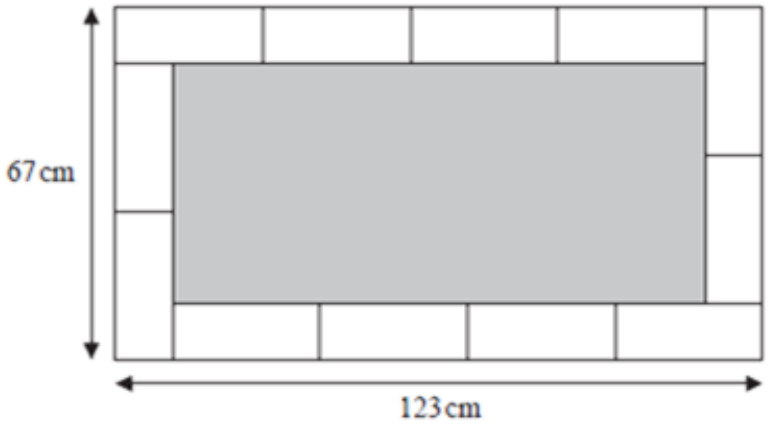


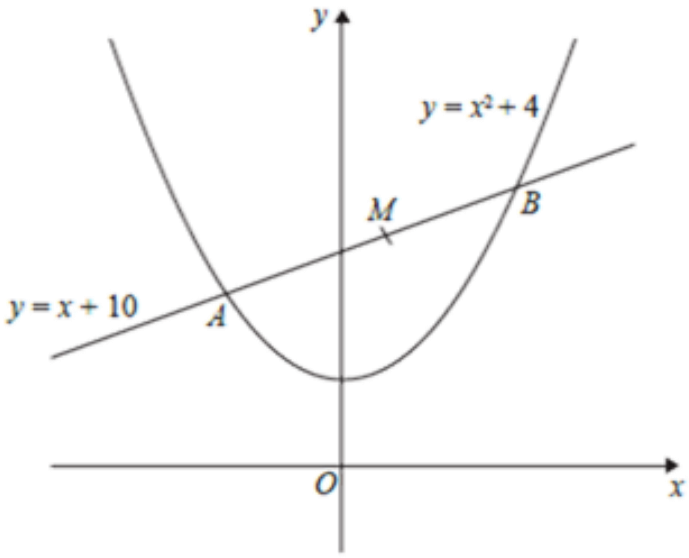
Diagram **NOT** accurately drawn

Work out the area of the shaded rectangle.

Quadratic equations

1. June 2016 4HR Q20

The sketch shows the curve with equation $y = x^2 + 4$ and the line with equation $y = x + 10$



The line cuts the curve at the points A and B.

M is the midpoint of AB.

Find the coordinates of M.
Show clear algebraic working.

2. Jan 2017 (3H) Q23

Solve the simultaneous equations

$$x^2 + y^2 = 52$$
$$2x + y = 8$$

Show clear algebraic working.

3. June 2018 (2HR) Q18

Solve the simultaneous equations

$$2x^2 + 3y^2 = 14$$

$$x = 2y - 3$$

Show clear algebraic working.

4. June 2017 (3HR) Q18

Solve the simultaneous equations

$$y^2 + 4x = 12$$

$$2x + 3y = 10$$

Show clear algebraic working.

5. June 2018 (3HR) Q19

Solve the simultaneous equations

$$y = 5x^2$$

$$y - 4 = 3x$$

Show your working clearly.
Give your solutions correct to 2 decimal places.