

Non-Linear Simultaneous Equations



SCAN ME



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REVISE THIS TOPIC

CHECK YOUR ANSWERS

1 Solve algebraically the simultaneous equations

$$y = x^2 - 3x - 4$$

$$y = 2x - 10$$



[5 marks]

Answer _____

2 Solve algebraically the simultaneous equations

$$y = x^2 + 5x - 8$$

$$y - 4x = 4$$



[5 marks]

Answer _____

10





3 Solve algebraically the simultaneous equations



$$y = 3x^2 + 2x - 8$$

$$y = 9x - 10$$

[5 marks]

Answer _____

4 A curve has equation $y = x^2 - 5x + 10$

A line has equation $y = 3x - 6$



Find the coordinates of the point of intersection of the curve and the line. [4 marks]

Answer (_____ , _____)





5 A curve has equation $y = 5x^2 - x - 15$
A line has equation $y = 10x - 3$



Find the coordinates of the points of intersection of the curve and the line.

[5 marks]

Answers (_____ , _____) and (_____ , _____)

6 Solve algebraically the simultaneous equations

$$y = x^2 + x + 1$$
$$y = x + 3$$



Give your answers as exact values.

[5 marks]

Answer _____

Turn over ►





7 Solve algebraically the simultaneous equations



$$x^2 + y^2 = 100$$
$$y = x - 2$$

[5 marks]

Answer _____

8 Solve algebraically the simultaneous equations



$$x^2 + y^2 = 200$$
$$y = 2x - 10$$

[5 marks]

Answer _____





9

A circle has equation $x^2 + y^2 = 65$

A line has equation $2y = 10 - x$



Find the coordinates of the points of intersection of the circle and the line.

[5 marks]

Answers (_____ , _____) and (_____ , _____)

10

A circle has equation $x^2 + y^2 = 85$

A line has equation $y + 3x = 25$



Find the coordinates of the points of intersection of the circle and the line.

[5 marks]

Answers (_____ , _____) and (_____ , _____)

20

Turn over ►



11 Solve algebraically the simultaneous equations

$$x^2 - 2y^2 = 7$$

$$2y = x + 1$$



[5 marks]

Answer _____

12 A curve has equation $2x^2 - 3y^2 = 15$
A line has equation $y = x - 2$



Find the coordinates of the points of intersection of the curve and the line.

[5 marks]

Answers (_____ , _____) and (_____ , _____)





13 A curve has equation $x^2 - 8y^2 = k$ where k is a positive integer.
A line has equation $4y = x - 1$

The curve and the line intersect at the points A and B.
The x -coordinate of point A is -7.

13 (a) Work out the value of k . [3 marks]

$k =$ _____

13 (b) Work out the coordinates of point B. [4 marks]

B= (_____ , _____)

17

