Non-Linear Simultaneous Equations

SCAN ME

REVISE THIS TOPIC

CHECK YOUR ANSWERS

SCAN ME

1 Solve algebraically the simultaneous equations

$y = x^2 - 3x - 4$
$y = 2x - 10$

.....

(Total for Question 1 is 5 marks)

2 Solve algebraically the simultaneous equations

$y = x^2 + 5x - 8$
$y - 4x = 4$

.....

(Total for Question 2 is 5 marks)

3 Solve algebraically the simultaneous equations

$y = 3x^2 + 2x - 8$
$y = 9x - 10$

.....

(Total for Question 3 is 5 marks)

4 **C** is a graph with equation $y = x^2 - 5x + 10$

L is a straight line with equation $y = 3x - 6$

Using algebra, find the coordinates of the point of intersection of **C** and **L**.
You must show all your working.

(..... , ...)

(Total for Question 4 is 4 marks)

5 **C** is a graph with equation $y = 5x^2 - x - 15$

L is a straight line with equation $y = 10x - 3$

Using algebra, find the coordinates of the points of intersection of **C** and **L**.
You must show all your working.

(..... , ...)

(..... , ...)

(Total for Question 5 is 5 marks)

6 Solve algebraically the simultaneous equations

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

Give your answers as exact values.

.....

(Total for Question 6 is 5 marks)

7 Solve algebraically the simultaneous equations

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

.....

(Total for Question 7 is 5 marks)

8 Solve algebraically the simultaneous equations

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

.....

(Total for Question 8 is 5 marks)

9 **C** is a graph with equation $x^2 + y^2 = 65$

L is a straight line with equation $2y = 10 - x$

Using algebra, find the coordinates of the point of intersection of **C** and **L**.
You must show all your working.

(..... , ...)

(..... , ...)

(Total for Question 9 is 5 marks)

10 **C** is a graph with equation $x^2 + y^2 = 85$

L is a straight line with equation $y + 3x = 25$

Using algebra, find the coordinates of the points of intersection of **C** and **L**.
You must show all your working.

(..... , ...)

(..... , ...)

(Total for Question 10 is 5 marks)

11 Solve algebraically the simultaneous equations

$x^2 - 2y^2 = 7$
$2y = x + 1$

.....

(Total for Question 11 is 5 marks)

12 **C** is a graph with equation $2x^2 - 3y^2 = 15$

L is a straight line with equation $y = x - 2$

Using algebra, find the coordinates of the points of intersection of **C** and **L**.
You must show all your working.

(..... , ...)

(..... , ...)

(Total for Question 12 is 5 marks)

13 **C** is a graph with equation $x^2 - 8y^2 = k$ where k is a positive integer.

L is a straight line with equation $4y = x - 1$

L and **C** intersect at points A and B.

The x-coordinate of point A is -7.

(a) Work out the value of k.

$k =$ .....

(3)

(b) Work out the coordinates of point B.

(..... , ...)

(4)

(Total for Question 13 is 7 marks)