

Linear and Quadratic Simultaneous Equations

For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **28**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Solve the simultaneous equations

$$y = x^2 - 4$$

$$y = 3x$$

.....
(4)

(Total for Question 1 is 4 marks)

2 Solve algebraically the simultaneous equations

$$x^2 + y^2 = 13$$

$$y - x = 1$$

.....
(5)

(Total for Question 2 is 5 marks)

3 Solve algebraically the simultaneous equations

$$y = 2x^2 - 5x + 1$$

$$y = x - 3$$

.....
(5)

(Total for Question 3 is 5 marks)

- 4 Solve algebraically the simultaneous equations

$$2x^2 + y^2 = 22$$

$$x + y = 1$$

.....
(5)

(Total for Question 4 is 5 marks)

- 5 Here are the equations of a curve and a straight line.

curve: $y = x^2 - 3x + 7$

line: $y = 3x - 2$

Show algebraically that the line is a tangent to the curve.

Find the coordinates of the point where the line touches the curve.

(..... ,)
(5)

(Total for Question 5 is 5 marks)

6 Solve algebraically the simultaneous equations

$$x^2 + y^2 = 15$$

$$x + 2y = 3$$

Give your solutions correct to 3 significant figures.

.....
(4)

(Total for Question 6 is 4 marks)
