A198 Simultaneous equations 2

Q1.

Solve algebraically the simultaneous equations

$$x^2 + y^2 = 25$$
$$y - 2x = 5$$

....

(Total for question = 5 marks)

Q2.

Solve algebraically the simultaneous equations

$$2x^2 - y^2 = 17$$
$$x + 2y = 1$$

(Total for question = 5 marks)

Q3.

Solve the simultaneous equations

$$y = 2x^2$$

$$y = 20 - 3x$$

Show clear algebraic working.

....

(Total for question = 5 marks)

Q4.

Solve the simultaneous equations

$$x^2 + y^2 = 26$$
$$y = 3 - 2x$$

Show clear algebraic working.

....

(Total for question = 6 marks)

Q5.

Solve the simultaneous equations

$$y^2 + 4x = 12$$
$$2x + 3y = 10$$

Show clear algebraic working.

....

(Total for question = 6 marks)

Q6.

The line with equation $y = x + 2$ intersects the curve with equation $x^2 + y^2 - 2y = 24$ at the points A and B.

Find the coordinates of A and B.
Show clear algebraic working.

(................ , ...)

(................ , ...)

(Total for question = 5 marks)

Q7.

The equation of the line **L** is $y = 9 - x$
The equation of the curve **C** is $x^2 - 3xy + 2y^2 = 0$

L and **C** intersect at two points.

Find the coordinates of these two points.
Show clear algebraic working.

(................ , ...) and (................ , ...)

(Total for question = 5 marks)

Q8.

Prove algebraically that the straight line with equation $x - 2y = 10$ is a tangent to the circle with equation $x^2 + y^2 = 20$

(Total for question = 5 marks)