Simultaneous Questions Exam Questions Sheet 2

Q1.

Solve the simultaneous equations

$$x + y = 2$$
$$4y^2 - x^2 = 11$$

(7)

(Total 7 marks)

Q2.
Solve the simultaneous equations

$$y - 3x + 2 = 0$$
$$y^2 - x - 6x^2 = 0$$

(7)

(Total 7 marks)

Q3.

Solve the simultaneous equations

$$y + 4x + 1 = 0$$
$$y^2 + 5x^2 + 2x = 0$$

(6)

(Total for question = 6 marks)

Q4.

Solve the simultaneous equations

$$y - 2x - 4 = 0$$
$$4x^2 + y^2 + 20x = 0$$

(7)

(Total for question = 7 marks)

Q5.

(a) By eliminating y from the equations

$$y = x - 4$$
$$2x^2 - xy = 8,$$

show that

$$x^2 + 4x - 8 = 0$$

(2)

(b) Hence, or otherwise, solve the simultaneous equations

$$y = x - 4,$$
$$2x^2 - xy = 8,$$

giving your answers in the form $a \pm b\sqrt{3}$, where a and b are integers.

(5)

(Total 7 marks)

Q6.

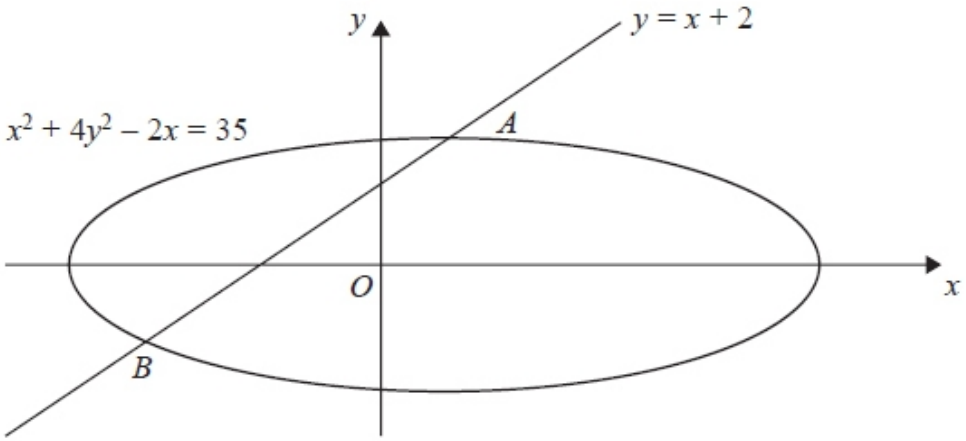

Figure 2

The line $y = x + 2$ meets the curve $x^2 + 4y^2 - 2x = 35$ at the points A and B as shown in Figure 2.

(a) Find the coordinates of A and the coordinates of B.

(6)

(b) Find the distance AB in the form $r\sqrt{2}$ where r is a rational number.

(3)

(Total 9 marks)