



## Simultaneous Questions Exam Questions Sheet 2

Q1.

Solve the simultaneous equations

$$\begin{aligned}x + y &= 2 \\ 4y^2 - x^2 &= 11\end{aligned}$$

(7)  
(Total 7 marks)

Q2.

Solve the simultaneous equations

$$\begin{aligned}y - 3x + 2 &= 0 \\ y^2 - x - 6x^2 &= 0\end{aligned}$$

(7)  
(Total 7 marks)

Q3.

Solve the simultaneous equations

$$\begin{aligned}y + 4x + 1 &= 0 \\ y^2 + 5x^2 + 2x &= 0\end{aligned}$$

(6)  
(Total for question = 6 marks)

Q4.

Solve the simultaneous equations

$$\begin{aligned}y - 2x - 4 &= 0 \\ 4x^2 + y^2 + 20x &= 0\end{aligned}$$

(7)  
(Total for question = 7 marks)



Q5.

(a) By eliminating  $y$  from the equations

$$\begin{aligned}y &= x - 4 \\ 2x^2 - xy &= 8,\end{aligned}$$

show that

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

(2)

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

$$\begin{aligned}y &= x - 4, \\ 2x^2 - xy &= 8,\end{aligned}$$

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

(5)

(Total 7 marks)

Q6.

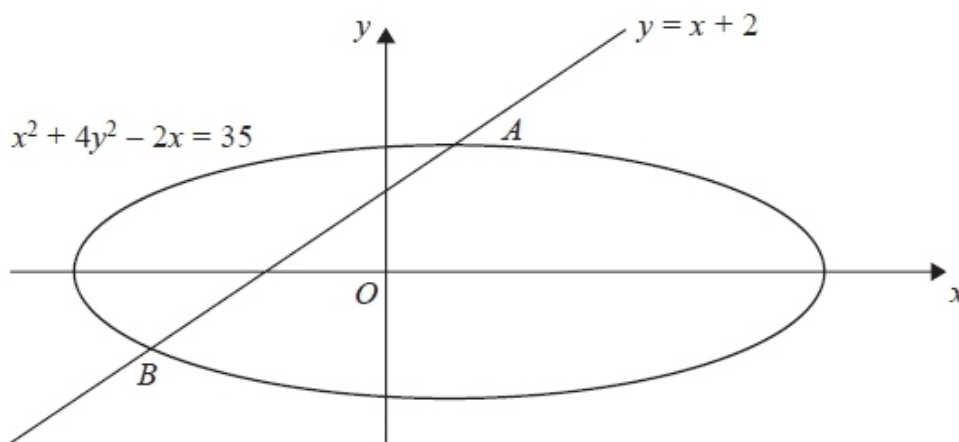


Figure 2

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)

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