
Simultaneous Equations - Past Edexcel Exam Questions

1. Solve the simultaneous equations

$$\begin{aligned}x + y &= 2 \\x^2 + 2y &= 12\end{aligned}$$

[6]

Question 4 - Jan 2005

2. Solve the simultaneous equations

$$\begin{aligned}x - 2y &= 1 \\x^2 + y^2 &= 29\end{aligned}$$

[6]

Question 5 - May 2005

3. Solve the simultaneous equations

$$\begin{aligned}y &= x - 2 \\y^2 + x^2 &= 10\end{aligned}$$

[6]

Question 4 - Jan 2007

4. (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]

Question 6 - May 2007

5. Solve the simultaneous equations

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

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

[7]

Question 5 - Jan 2010

6. Solve the simultaneous equations

$$x + y = 2$$

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

[7]

Question 4 - May 2011

7. Given the simultaneous equations

$$2x + y = 1,$$

$$x^2 - 4ky + 5k = 0$$

where k is a non zero constant,

(a) show that

$$x^2 + 8kx + k = 0$$

[2]

Given that $x^2 + 8kx + k = 0$ has equal roots,

(b) find the value of k .

[3]

(c) For this value of k , find the solution of the simultaneous equations.

[3]

Question 10 - May 2013

Solutions

1. $(-2, 4), (4, -2)$
2. $(5, 2), \left(\frac{-23}{5}, \frac{-14}{5}\right)$
3. $(-1, -3), (3, 1)$
4. (a) -
(b) $(-2 + 2\sqrt{3}, -6 + 2\sqrt{3}), (-2 - 2\sqrt{3}, -6 - 2\sqrt{3})$
5. $\left(\frac{1}{3}, -1\right), (4, 10)$
6. (a) -
(b) $(5, -3), \left(\frac{1}{3}, \frac{5}{3}\right)$
7. (a) -
(b) $k = \frac{1}{16}$
(c) $\left(-\frac{1}{4}, \frac{3}{2}\right)$