



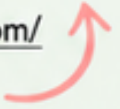
JP Maths

Revision



Attempt the paper
before watching the
solutions!

[https://www.youtube.com/
@JPMathsRevision](https://www.youtube.com/@JPMathsRevision)



HIGHER TIER

Quadratic Simultaneous Equations



INSTRUCTIONS

- Use **black ink** or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.



INFORMATION

- The marks for **each** question are shown in brackets– *use this as a guide as to how much time to spend on each question.*



ADVICE

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.



You've got this!

1. Solve the simultaneous equations

$$x^2 + y^2 = 10$$

$$y = x + 2$$

.....
(Total for Question 1 is 4 marks)

2. Solve the simultaneous equations

$$x^2 + y^2 = 65$$

$$x = y - 7$$

.....
(Total for Question 2 is 4 marks)

3. Solve the simultaneous equations

$$x^2 + 3y^2 = 28$$

$$y = x + 2$$

.....
(Total for Question 3 is 4 marks)

4. Solve the simultaneous equations

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

$$x - y = 1$$

.....
(Total for Question 4 is 4 marks)

5. Solve the simultaneous equations

$$x^2 + y^2 = 6$$

$$y = 3x - 4$$

Give your answers to 3 significant figures.

.....
(Total for Question 5 is 5 marks)

6. Solve the simultaneous equations

$$x^2 + 2y^2 = 20$$

$$x = y + 3$$

Give your answers to 3 significant figures.

.....
(Total for Question 6 is 5 marks)

7. Solve the simultaneous equations

$$x^2 - y^2 = 5.25$$

$$2x + 3y = 4$$

.....
(Total for Question 7 is 5 marks)

8. The curve C has equation

$$y = x^2 - 2x - 8$$

The line L has equation

$$y + 3x - 4 = 0$$

(a) Show, algebraically, that C and L have exactly one point in common.

(4)

(b) Hence, describe the relationship between the line L and the curve C.

.....

.....

.....

(1)