



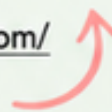
JP Maths

Revision



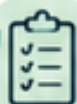
Attempt the paper
before watching the
solutions!

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



HIGHER TIER

Midpoints and Distance



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. Find the midpoint of the line segment joining A(2, 6) with B(8, 10)

$$\frac{2+8}{2}, \frac{6+10}{2}$$

$$(5, 8)$$

(Total for Question 1 is 1 mark)

2. Find the midpoint of the line segment joining P(-5, 7) with Q(3, -1)

$$\frac{-5+3}{2}, \frac{7-1}{2}$$

$$(-1, 3)$$

(Total for Question 2 is 1 mark)

3. Find the midpoint of the line segment joining A(-8, 4) with B(6, -10)

$$\frac{-8+6}{2}, \frac{4-10}{2}$$

$$(-1, -3)$$

(Total for Question 3 is 1 mark)

4. Find the midpoint of the line segment joining R(-1, -3) with S(-5, -8)

$$\frac{-1-5}{2}, \frac{-3-8}{2}$$

$$(2, -2.5)$$

(Total for Question 4 is 1 mark)

5. Point M is the midpoint of the line joining $A(3, -2)$ and $B(x, 8)$

The coordinates of M are $(7, 3)$.

Find the value of x .

$$\frac{3+x}{2} = 7$$

$$3+x = 14$$

$$x = 11$$

(Total for Question 5 is 2 marks)

6. Point P has coordinates $(-4, 9)$.

The midpoint of PQ is $(3, 2)$.

Find the coordinates of the point Q.

$$\frac{-4+x}{2} = 3$$

$$-4+x = 6$$

$$x = 10$$

$$\frac{9+y}{2} = 2$$

$$9+y = 4$$

$$y = -5$$

$$(10, -5)$$

(Total for Question 5 is 2 marks)

7. The midpoint of the line joining $(-7, a)$ and $(5, 11)$ is $(-1, 6)$.

Find the value of a .

$$\frac{a+11}{2} = 6$$

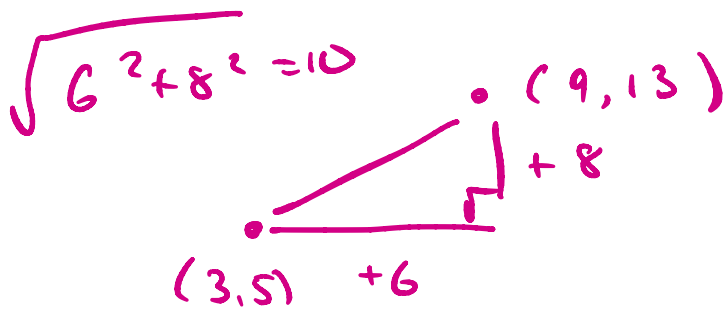
$$a+11 = 12$$

$$a = 1$$

$$a = 1$$

(Total for Question 7 is 2 marks)

8. Find the distance of the line segment joining A(3, 5) with B(9, 13)



10

(Total for Question 8 is 2 marks)

9. Find the distance of the line segment joining P(-4, 7) with Q(-3, -2).

Give your answer to 1 decimal place.

$$\sqrt{1^2 + 9^2} = \sqrt{82}$$

9.1

(Total for Question 2 is 1 mark)

10. Find the distance of the line segment joining A(2, 3) with B(8, 12).

Give your answer to 1 decimal place.

$$\sqrt{6^2 + 9^2} = \sqrt{117} \\ = 10.8$$

10.8

(Total for Question 3 is 1 mark)

11. Find the distance of the line segment joining R(-5, -1) with S(7, -6).

$$\sqrt{12^2 + 5^2} = 13$$

13

(Total for Question 4 is 1 mark)