

Name:

Exam Style Questions

Distance between 2 points



Corbettmaths

Equipment needed: Pen and Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

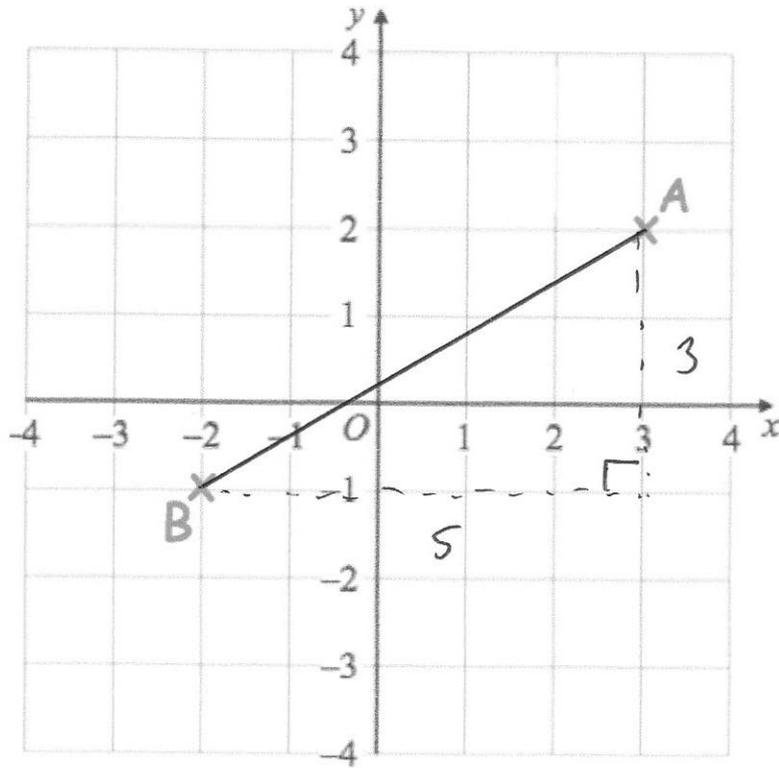
Videos 88, 185, 258, 263



Answers and Video Solutions



1.



Work out the distance between the points A and B.

$$a^2 + b^2 = c^2$$

$$3^2 + 5^2 = c^2$$

$$9 + 25 = c^2$$

$$34 = c^2$$

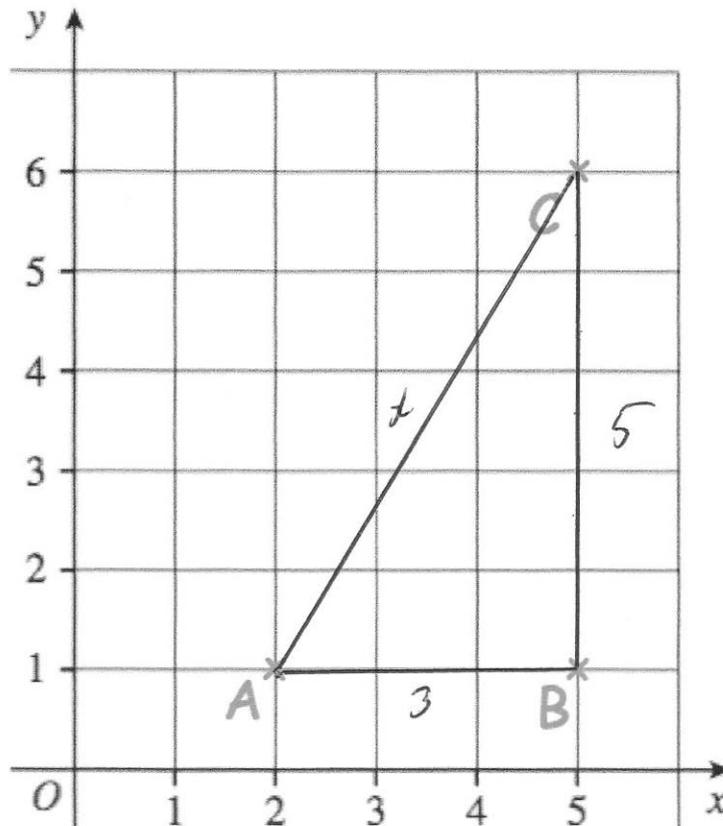
$$c = \sqrt{34}$$

$$c = 5.83$$

$$5.83$$

(3)

2. Three points are shown on the grid.



(a) Write down the distance between B and C.

5
(1)

(b) Write down the distance between A and C.

$$3^2 + 5^2 = z^2$$

$$9 + 25 = z^2$$

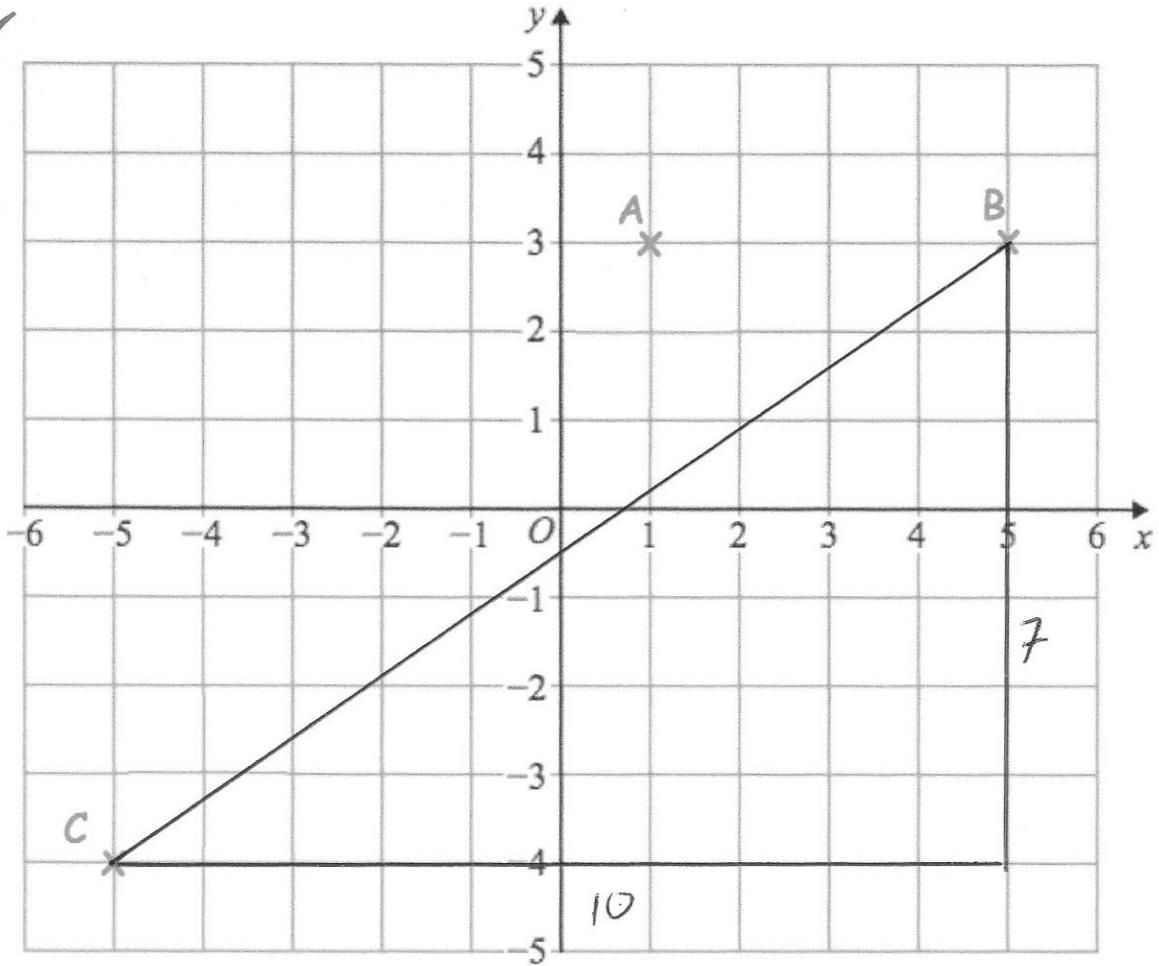
$$34 = z^2$$

$$z = \sqrt{34}$$

$$= 5.83$$

5.83
(3)

3.



Work out the distance between the points B and C.

$$7^2 + 10^2 = c^2$$

$$49 + 100 = c^2$$

$$c^2 = 149$$

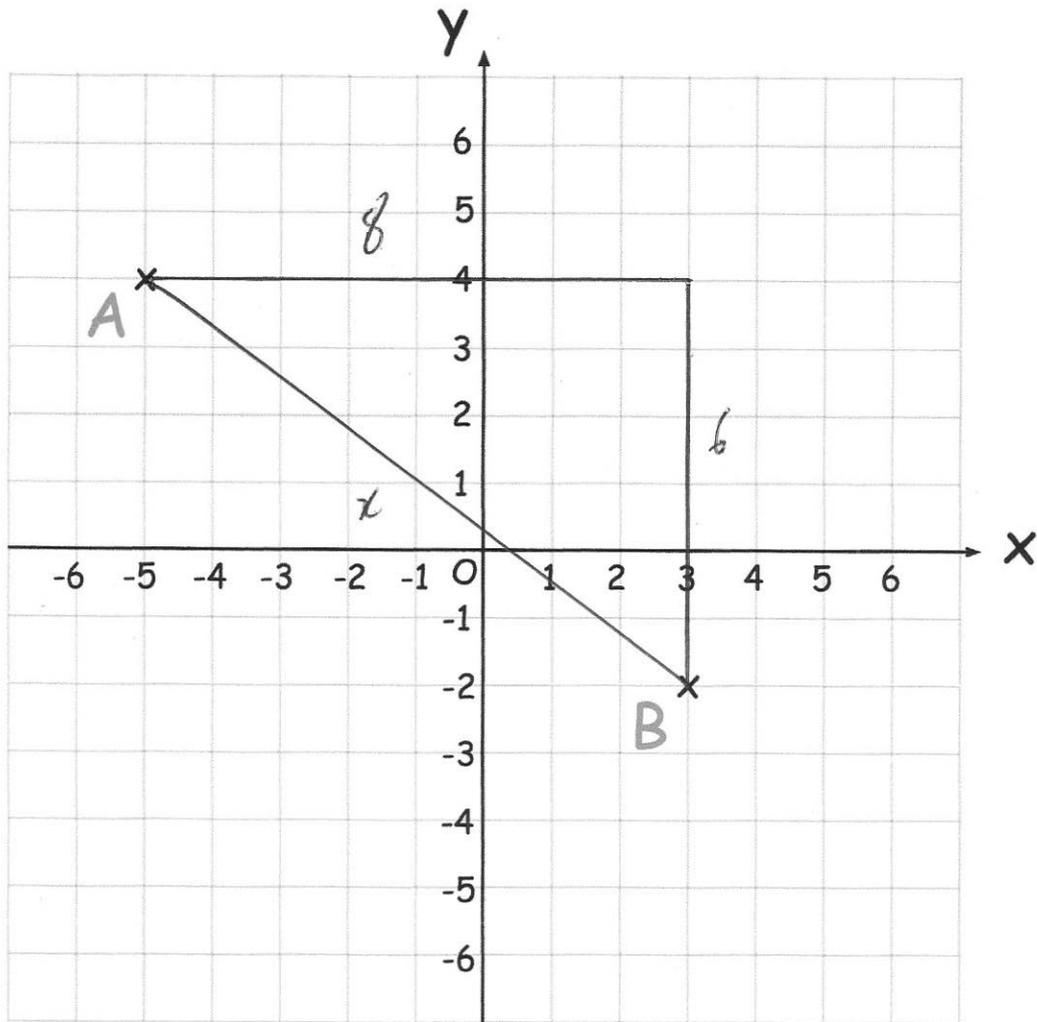
$$c = \sqrt{149}$$

$$= 12.20655\dots$$

12.21

 to 2dp (3)

4. The points A and B are shown on the grid.



Work out the distance between point A and point B.

$$x^2 = 6^2 + 8^2$$

$$x^2 = 36 + 64$$

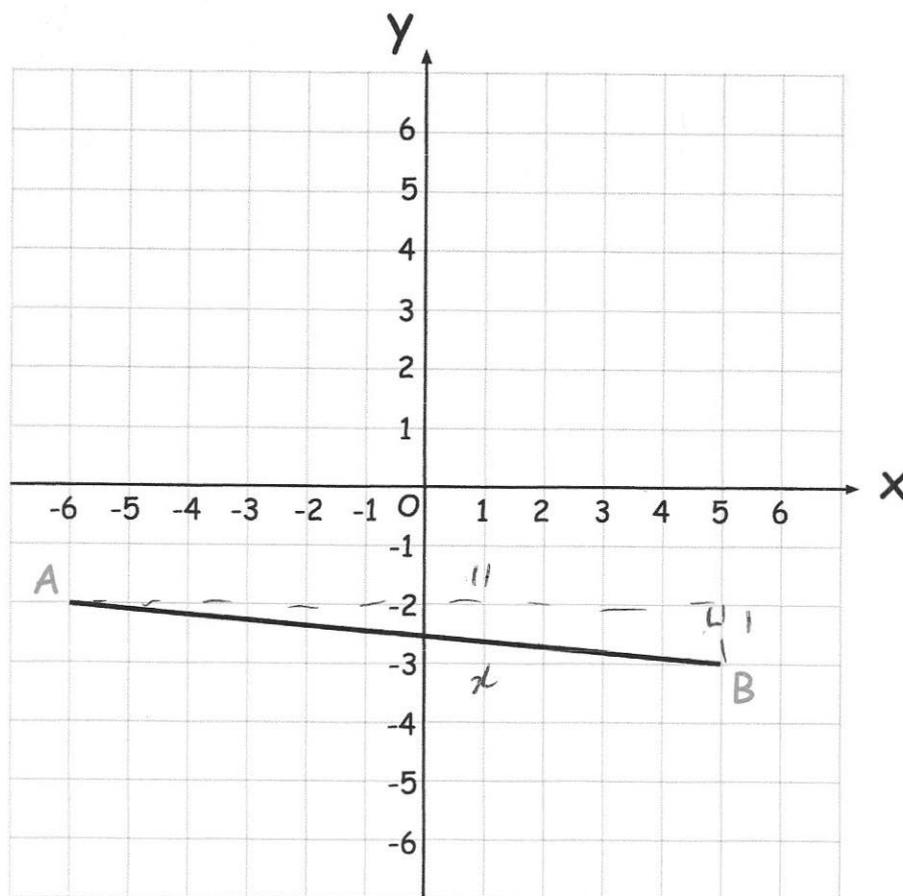
$$x^2 = 100$$

$$x = 10$$

10

.....
(3)

5. A line joins the points A (-6, -2) and B (5, -3)



Work out the length of the line AB.
Give your answer to 3 decimal places.

$$x^2 = 1^2 + 11^2$$

$$x^2 = 1 + 121$$

$$x^2 = 122$$

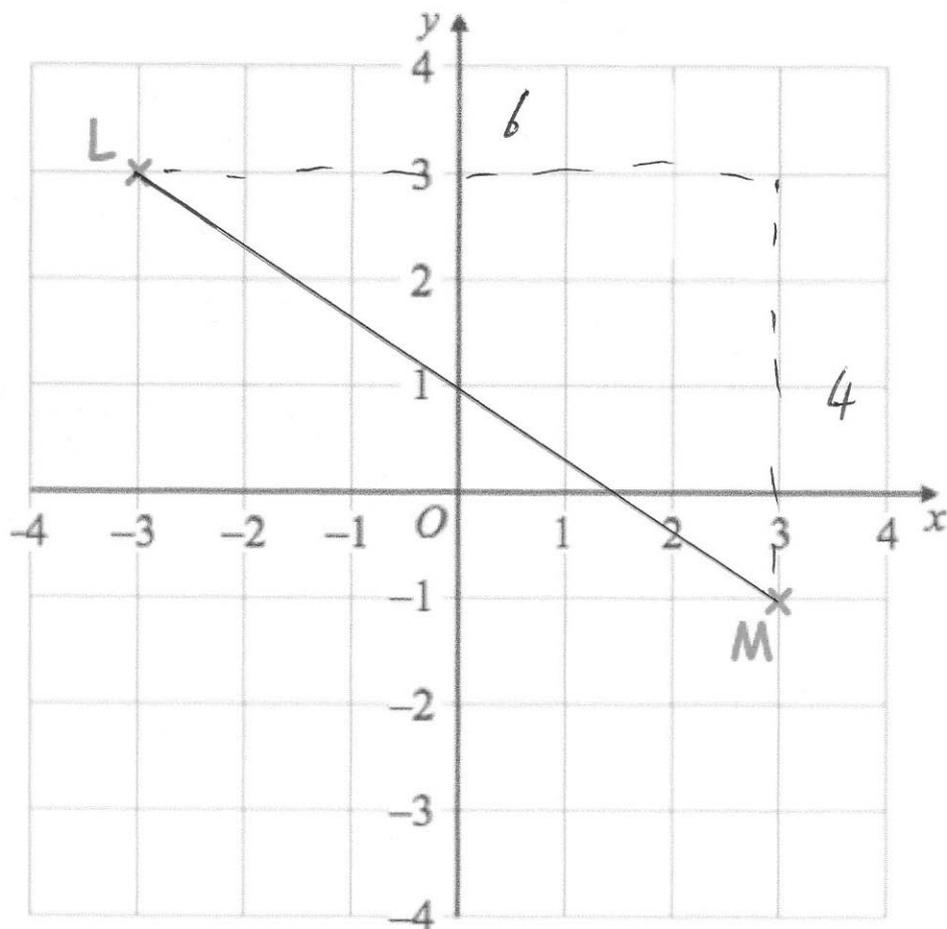
$$x = \sqrt{122}$$

$$x = 11.04536\dots$$

$$\begin{array}{r} 11.045 \\ \hline \end{array}$$

(3)

6.



Work out the distance between the points L and M.

$$x^2 = 4^2 + 6^2$$

$$= 16 + 36$$

$$x^2 = 52$$

$$x = \sqrt{52}$$

$$= 2\sqrt{13}$$

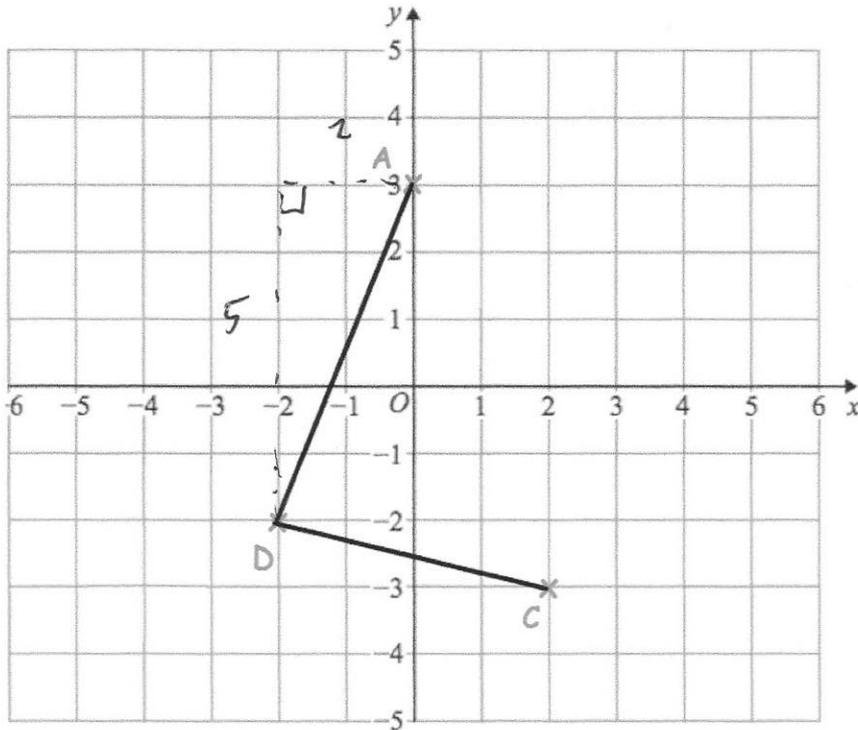
$$= 7.211102\dots$$

$$\underline{\underline{7.211\dots}}$$

(3)

7.

The points A (0, 3), C (2, -3) and D (-2, -2) are shown.



Calculate the length of line segment AD.

$$x^2 = 2^2 + 5^2$$

$$x^2 = 4 + 25$$

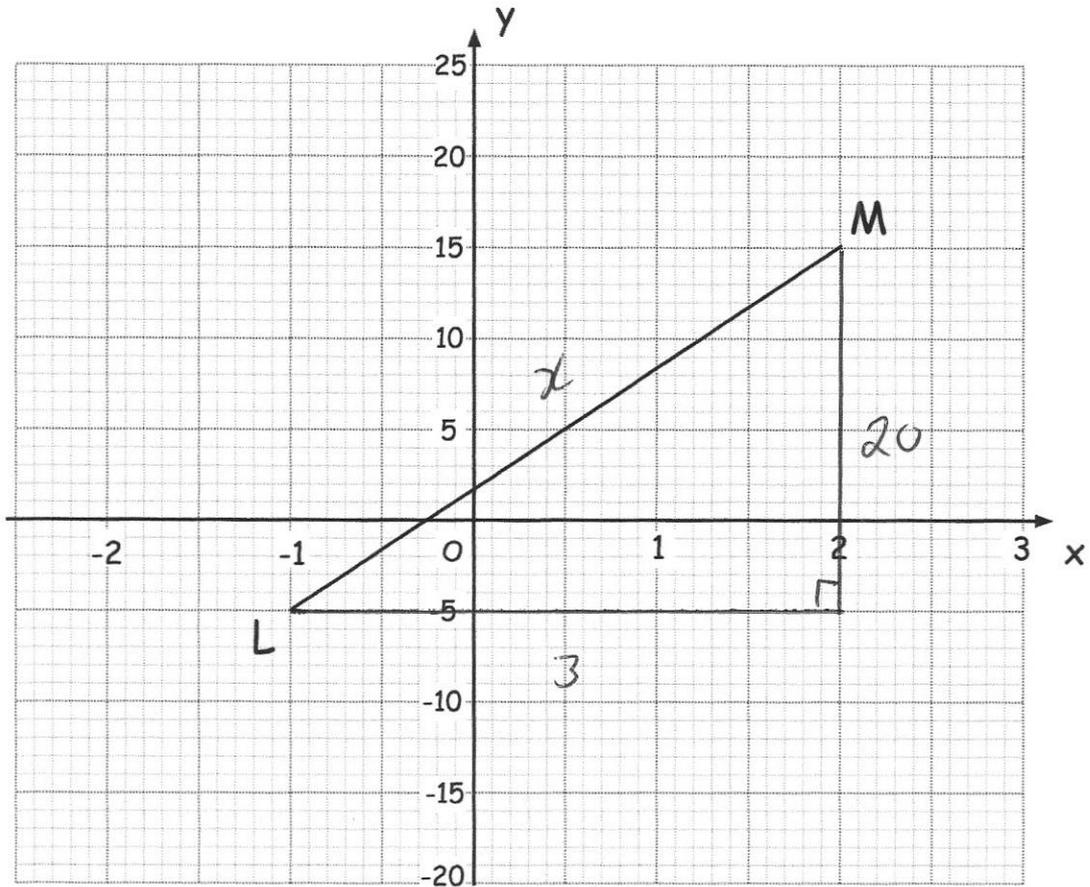
$$x^2 = 29$$

$$x = \sqrt{29}$$

5.385

(3)

8.



Work out the length of the line LM.

$$x^2 = 3^2 + 20^2$$

$$x^2 = 9 + 400$$

$$x^2 = 409$$

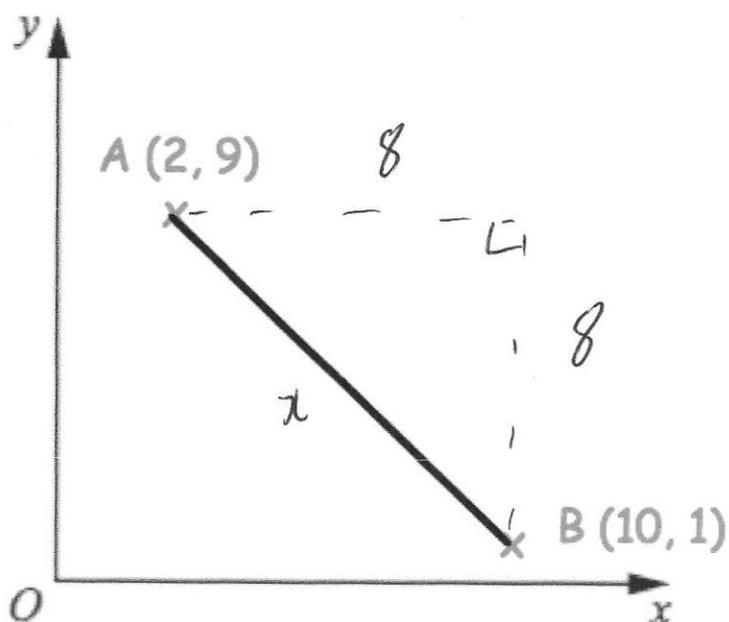
$$x = \sqrt{409}$$

$$= 20.2237..$$

20.22

(3)

9.



A is the point with coordinates (2, 9).

B is the point with coordinates (10, 1).

Calculate the length of the line segment AB.

$$x^2 = 8^2 + 8^2$$

$$= 64 + 64$$

$$x^2 = 128$$

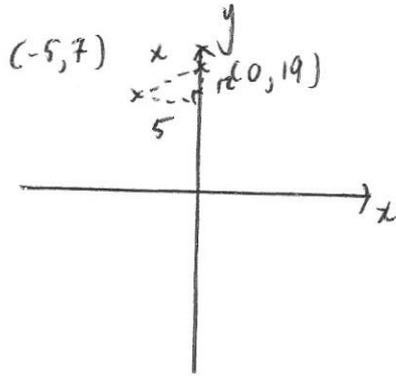
$$x = \sqrt{128}$$

$$= 8\sqrt{2}$$

11.314

(3)

10. Work out the distance between the points $(-5, 7)$ and $(0, 19)$.



$$x^2 = 5^2 + 12^2$$

$$x^2 = 25 + 144$$

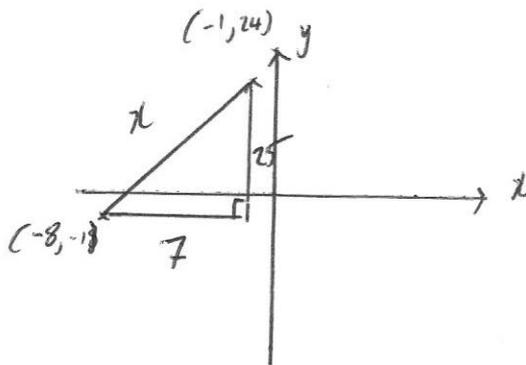
$$x^2 = 169$$

$$x = 13$$

13

(3)

11. Calculate the distance between the points $(-8, -1)$ and $(-1, 24)$.



$$x^2 = 7^2 + 25^2$$

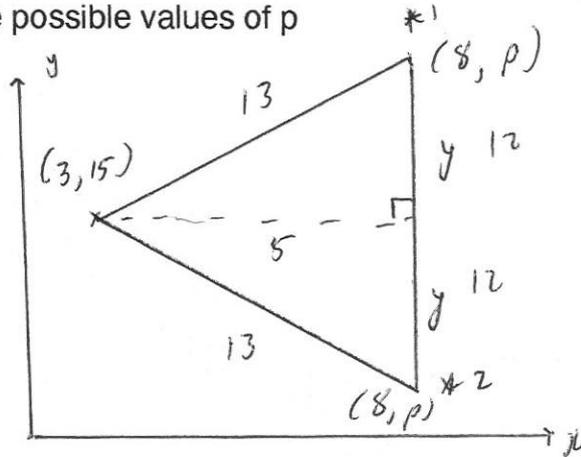
$$x^2 = 674$$

$$x = 25.96 \dots$$

25.96

(3)

12. The distance between the points $(3, 15)$ and $(8, p)$ is 13
Find the possible values of p



$$5^2 + y^2 = 13^2$$

$$y^2 = 144$$

$$y = 12$$

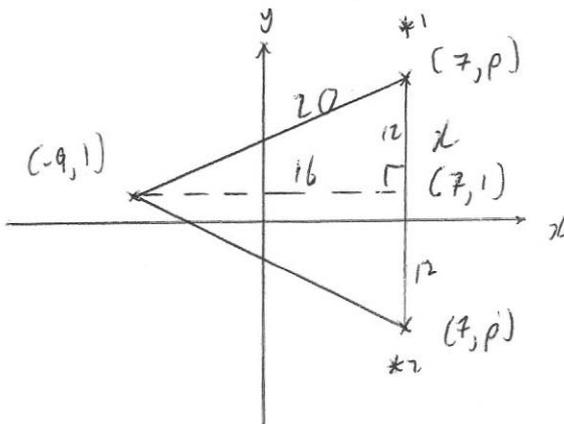
*1 $(8, 27)$

*2 $(8, 3)$

3 or 27

(3)

13. The distance between the points $(-9, 1)$ and $(7, p)$ is 20
Find the possible values of p



$$16^2 + x^2 = 20^2$$

$$256 + x^2 = 400$$

$$x^2 = 144$$

$$x = 12$$

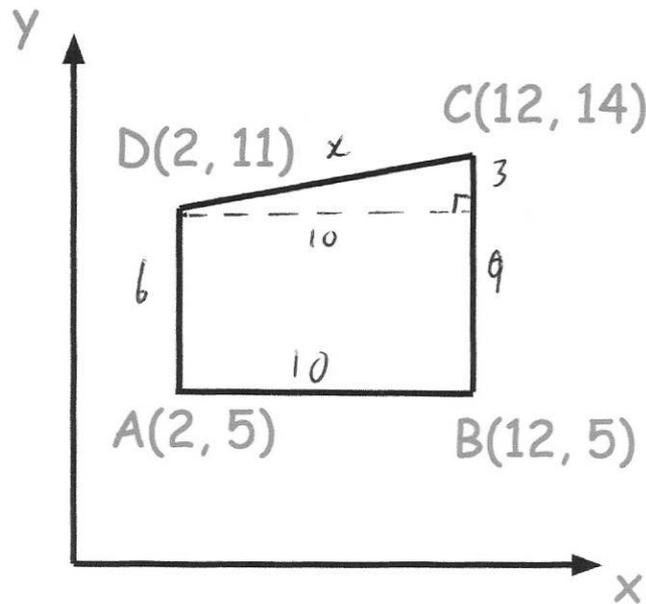
*1 $(7, 13)$

*2 $(7, -11)$

-11 and 13

(3)

14. Shown below is trapezium ABCD.



Find the perimeter of ABCD.

$$\begin{aligned} CD^2 &= 3^2 + 10^2 \\ &= 9 + 100 \\ &= 109 \end{aligned}$$

$$\begin{aligned} CD &= \sqrt{109} \\ &= 10.44\dots \end{aligned}$$

$$\begin{aligned} 6 + 10 + 9 + 10.44\dots \\ = 35.44 \end{aligned}$$

$$\underline{\underline{35.44}}$$

(5)

15. The points D and E have coordinates $(-2, 7)$ and $(8, 10)$.
Given DE is the diameter of the circle C.



(a) Find the coordinates of the centre of circle C.

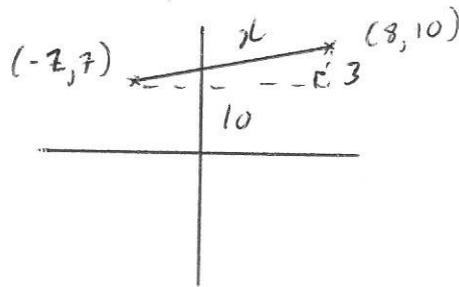
$$\left(\frac{-2+8}{2}, \frac{7+10}{2} \right)$$

$$\left(\frac{6}{2}, \frac{17}{2} \right)$$

$$(3, 8.5)$$

$$\frac{(3, 8.5)}{(1)}$$

(b) Calculate the exact length of the diameter DE.



$$x^2 = 3^2 + 10^2$$

$$= 9 + 100$$

$$= 109$$

$$x = \sqrt{109}$$

$$= 10.44\dots$$

$$\frac{10.44}{(3)}$$