

Name: _____

Exam Style Questions

Equation of a Circle



Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

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Video 12



1. The equation of a circle C, with centre O, is:

$$(x - 3)^2 + (y + 2)^2 = 25$$

(a) Find the coordinates of the centre O.

(..... ,)
(1)

(b) Find the radius of C.

.....
(1)

(c) Show the point (6, 2) lies on C.

(2)

2. A circle has centre (5, 2) and radius 4.

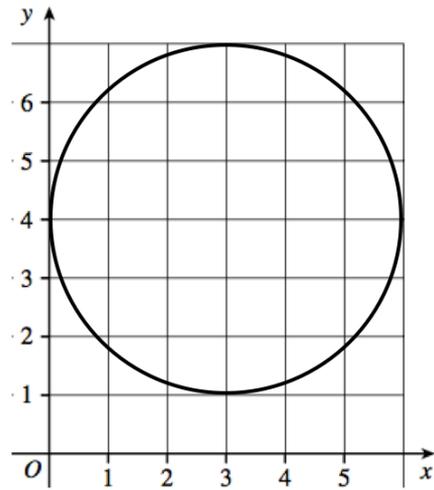
(a) Write down the equation of the circle.

.....
(2)

(b) Does the point (7, 4) lie on the circle?

.....
(2)

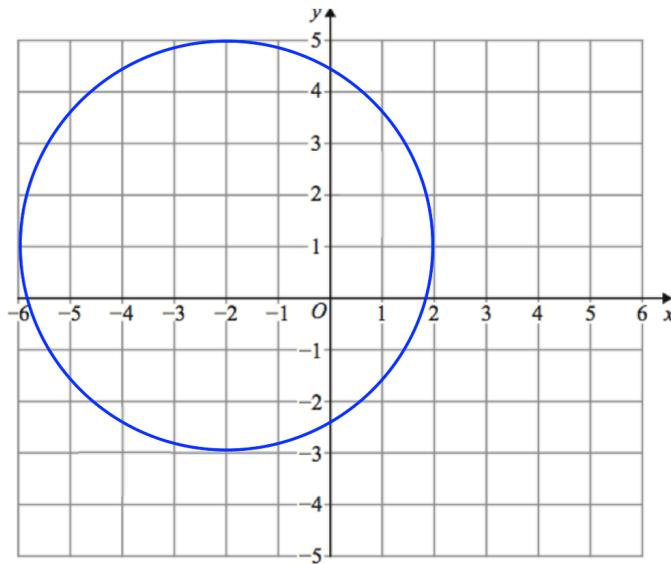
3.



Find the equation of the circle.

.....
(2)

4.



Find the equation of the circle.

.....
(2)

5. A circle C has centre O

The points A (0, 6) and B (8, 6) lie on the diameter of C.

(a) Find the coordinates of the centre O.

(..... ,)
(1)

(b) Write down the equation of the circle.

.....
(2)

6. AB is a diameter of a circle C.
O is the centre of the circle
A has coordinates (-2, 12) and B has coordinates (8, 2).

(a) Find the centre of the circle, O.

(..... ,)
(1)

(b) Find the equation of C

.....
(2)

(c) Show the point D, (10, 8) lies on C.

(2)

(d) Find the gradient of OD.

.....
(2)

(e) Find the equation of the tangent to C at the point D.

.....
(3)

7. A circle has equation $(x - 5)^2 + (y + 2)^2 = 20$

(a) Find the centre of the circle.

(..... ,)
(1)

(b) State, with a reason, whether this circle intersects the y-axis.

(2)

(c) Find the equation of a line parallel to $y = 2x$ that passes through the centre of the circle.

.....
(3)

(d) Prove $y = 2x - 2$ is a tangent to the circle

(3)

(e) Find the coordinates of the point of contact.

(2)

8. A circle has centre C and equation $x^2 + y^2 - 6x + 14y + 49 = 0$

(a) Find the centre of the circle.

(..... ,)
(2)

(b) Find the radius of the circle

.....
(2)