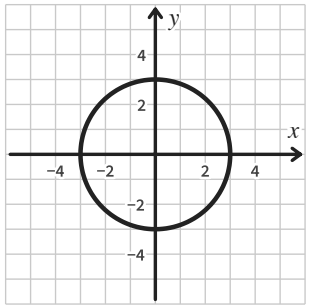
The equation of a circle

1

The circle has its centre at the origin.
Write down the equation of the circle.



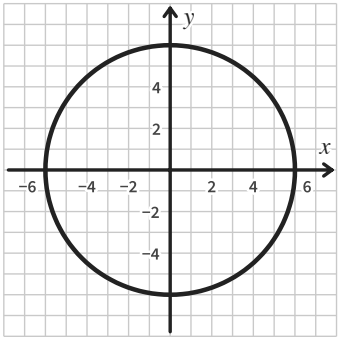
Radius 3

Radius² 9

$x^2 + y^2 =$

2

The circle has its centre at the origin.
Write down the equation of the circle.



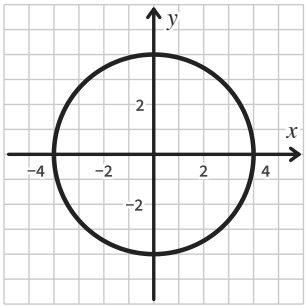
Radius 6

Radius²

$x^2 + y^2 =$

3

The circle has its centre at the origin.
Write down the equation of the circle.



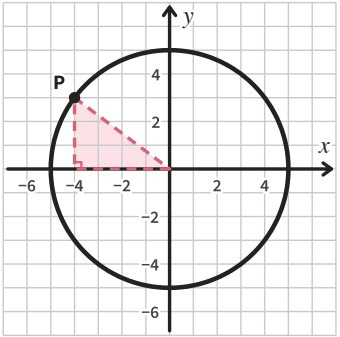
Radius

Radius²

$x^2 + y^2 =$

4 *Notice the change!*

The circle has its centre at the origin and passes through P(−4, 3). Write down the equation of the circle.

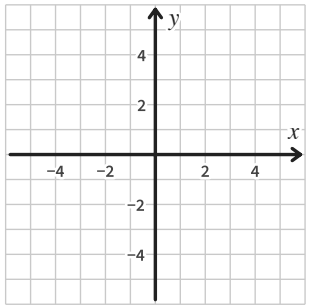


$(-4)^2 + 3^2 =$

$x^2 + y^2 =$

5 *Notice the change!*

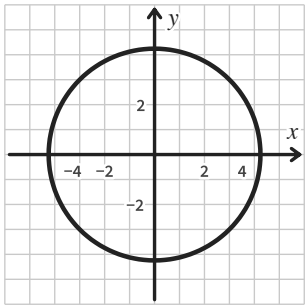
Draw the circle $x^2 + y^2 = 4$.



Radius

6

The graph shows the circle $x^2 + y^2 = 18$.
Write down its radius. Between which two whole numbers is it?

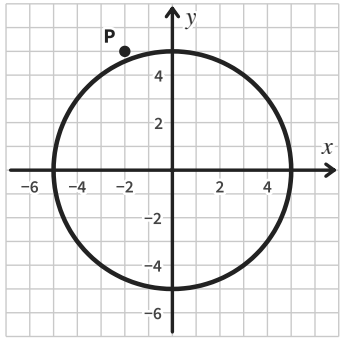


Radius

Between

7 *Notice the change!*

Is P(−2, 5) inside, on or outside the circle $x^2 + y^2 = 25$?



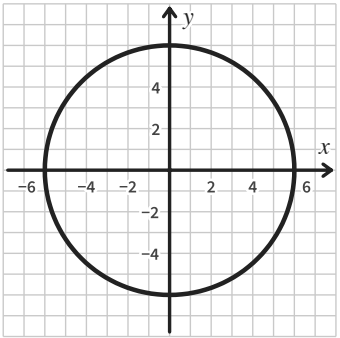
$(-2)^2 + 5^2 =$

Compare with 25

Inside, on or outside?

8

Mia says the circle $x^2 + y^2 = 36$ has a radius of 36. Explain her mistake.
Write down the radius.



Radius

The equation of a circle *further practice*

9

Is the point (6, −1) inside, on or outside the circle $x^2 + y^2 = 40$?
Show how you know.

Answer _____

10

A circle has its centre at the origin and passes through (−2, −7).
Write down its equation.

Answer _____

11

Write down the coordinates of the four points where the circle $x^2 + y^2 = 49$ crosses the axes.

Answer _____

12

The point $(k, -2)$ is on the circle $x^2 + y^2 = 29$. Find the two possible values of k.

Answer _____

13

On a plan of a room, a circular rug has the equation $x^2 + y^2 = 6.25$, in metres, with its centre at the origin.
How wide is the rug?

Answer _____

14

Which point is further from the origin, P(4, −6) or Q(−7, 1)? Use $x^2 + y^2$ to explain.

Answer _____

15

Find the coordinates of the two points where the line $y = 3$ meets the circle $x^2 + y^2 = 25$.

Answer _____

16

Amir says the point (2, 1) is on the circle $x^2 + y^2 = 9$, because 2 + 1 = 3 and the radius is 3. Is he right? Explain.

Answer _____