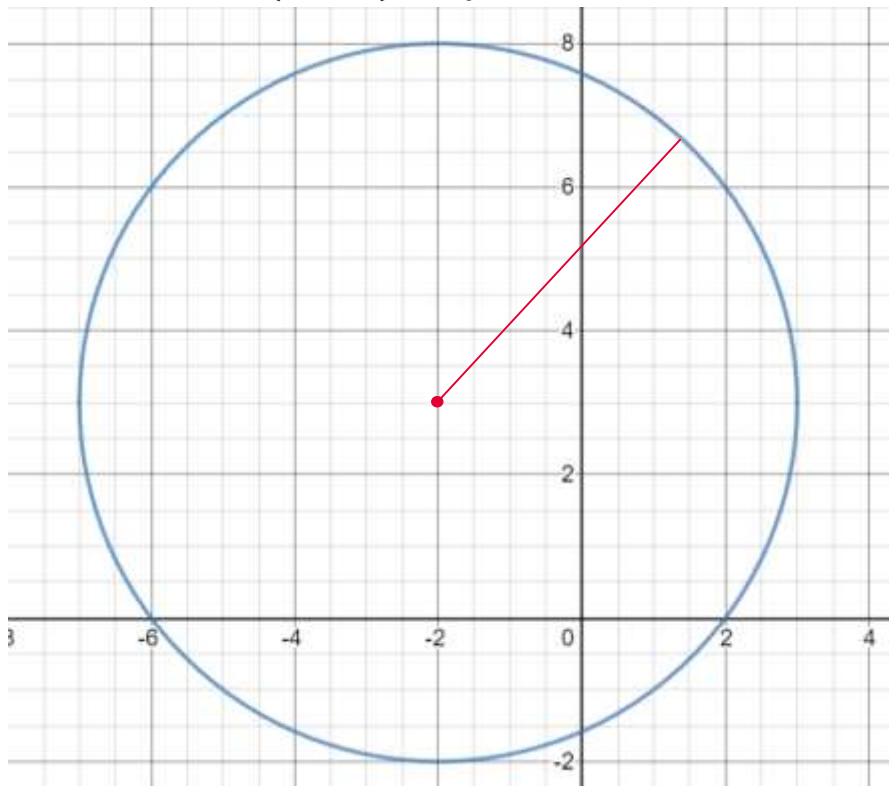




$$(x + 2)^2 + (y - 3)^2 = 25$$

Represents a circle with
Centre (-2,3)
Radius 5

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



If we expand this equation

$$\begin{aligned} (x + 2)^2 + (y - 3)^2 &= 25 \\ x^2 + 4x + 4 + y^2 - 6y + 9 &= 25 \\ x^2 + 4x + y^2 - 6y + 13 &= 25 \\ x^2 + 4x + y^2 - 6y &= 12 \end{aligned}$$

We return it to the original form



- Can you find the centre and radii of these circles by rearranging into the form

$$(x + a)^2 + (y - b)^2 = r^2$$

$$x^2 - 8x + y^2 - 2y = 19$$

$$(x - 4)^2 - 16 + (y - 1)^2 - 1 = 19$$

$$(x - 4)^2 + (y - 1)^2 - 17 = 19$$

$$(x - 4)^2 + (y - 1)^2 = 36$$

Circle centre (4,1) radius 6

$$x^2 + 6x + y^2 - 10y = 8$$

$$(x + 3)^2 - 9 + (y - 5)^2 - 25 = 15$$

$$(x + 3)^2 + (y - 5)^2 - 34 = 15$$

$$(x + 3)^2 + (y - 5)^2 = 49$$

Circle centre (-3, 5) radius 7