

Equation of a Circle

Find the centre and radius of each of these circles:

- (a) $(x - 1)^2 + (y - 1)^2 = 9$
- (b) $(x - 1)^2 + (y - 1)^2 = 25$
- (c) $(x - 3)^2 + (y - 2)^2 = 25$
- (d) $(x + 3)^2 + (y + 2)^2 = 16$
- (e) $x^2 + (y + 2)^2 = 16$
- (f) $(x - 4)^2 + y^2 = 36$

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Write down the equation of the circle with:

- (a) Centre (1, 2) and radius 8
- (b) Centre (7, 3) and radius 2
- (c) Centre (-2, 5) and radius 5
- (d) Centre (-5, -1) and radius 4
- (e) Centre (3, -6) and radius $\sqrt{7}$
- (f) Centre (0, -4) and radius $\sqrt{20}$

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Find the centre and radius of the circle with equation:

- (a) $x^2 + y^2 - 2x + 8y - 8 = 0$
- (b) $x^2 + y^2 + 12x - 4y = 9$
- (c) $x^2 + y^2 - 22x - 6y + 40 = 0$
- (d) $x^2 + y^2 - 4x - 11 = 0$

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(a) Show that the point (2, 10) lies on the circle with equation

$$(x - 2)^2 + (y - 7)^2 = 9$$

(b) A circle has centre (5, 10). The point (2, 14) lies on the circumference of the circle. Find the equation of the circle.

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