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

(a) $(1,1)$ radius 3

(b) $(1,1)$ radius 5

(c) $(3,2)$ radius 5

(d) $(-3,-2)$ radius 4

(e) $(0,-2)$ radius 4

(f) $(4,0)$ radius 6

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 $\sqrt{20}$

(a) $(x-1)^2 + (y-2)^2 = 64$

(b) $(x-7)^2 + (y-3)^2 = 4$

(c) $(x+2)^2 + (y-5)^2 = 25$

(d) $(x+5)^2 + (y+1)^2 = 16$

(e) $(x-3)^2 + (y+6)^2 = 7$

(f) $x^2 + (y+4)^2 = 20$

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) $x^2 + y^2 - 4x - 11 = 0$

(a) $(x-1)^2 + (y+4)^2 = 25$
centre $(1,-4)$ radius 5

(b) $(x+6)^2 + (y-2)^2 = 49$
centre $(-6,2)$ radius 7

(c) $(x-11)^2 + (y-3)^2 = 90$
centre $(11,3)$ radius $\sqrt{90}$

(d) $(x-2)^2 + y^2 = 15$
centre $(2,0)$ radius $\sqrt{15}$

(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.

(a) $(2-2)^2 + (10-7)^2 = 9$ ✓

(b) $(x-5)^2 + (y-10)^2 = 25$