Finding the equation of a circle

A LEVEL LINKS
Scheme of work: 2a. Straight-line graphs, parallel/perpendicular, length and area problems

Practice question

1 A circle, with centre C and radius r, has equation

$$x^2 + y^2 - 8x + 4y - 12 = 0$$

Find

(a) the coordinates of C,

(b) the exact value of r.

The circle cuts the y-axis at the points A and B.

(c) Find the coordinates of the points A and B.

Answer

1 **a** $C = (4, -2)$

   b $r = \sqrt{32}$

   c $y = 2, -6$ or $(0, 2)$ and $(0, -6)$