## THE CIRCLE (Q 3, PAPER 2)

## 2002

- 3 (a) Write down the coordinates of any three points that lie on the circle with equation  $x^2 + y^2 = 100$ .
  - (b) The circle C has equation  $(x-2)^2 + (y+1)^2 = 8$ .
    - (i) Find the coordinates of the two points at which *C* cuts the *y*-axis.
    - (ii) Find the equation of the tangent to C at the point (4, 1).
  - (c) a(-5, 1), b(3, 7) and c(9, -1) are three points.
    - (i) Show that the triangle *abc* is right-angled.
    - (ii) Hence, find the centre of the circle that passes through *a*, *b* and *c* and write down the equation of the circle.

## Answers

3 (b) (i) (0, 1), (0, -3) (c) (ii) (2, 0),  $(x-2)^2 + y^2 = 50$  (ii) x + y - 5 = 0