## 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 $a b c$ 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

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

