## The Circle (Q 3, Paper 2)

## 1997

3 (a) The equation of a circle is $x^{2}+y^{2}=49$.
Write down
(i) its radius length
(ii) the coordinates of the points where it intersects the $x$-axis.
(b) Prove that the line $x-2 y+10=0$ is a tangent to the circle whose equation is $x^{2}+y^{2}=20$.
(c) $C$ is the circle with centre $(-1,2)$ and radius 5 .

Write down the equation of $C$.
The circle $K$ has equation $(x-8)^{2}+(y-14)^{2}=100$.
Prove that the point $p(2,6)$ is on $C$ and on $K$.
Show that $p$ lies on the line which joins the centres of the two circles.

## Answers

3
(a) (i) $r=7$
(ii) $(-7,0),(7,0)$
(c) $(x+1)^{2}+(y-2)^{2}=25$

