## The Circle (Q 3, Paper 2)

## 1996

3 (a) The equation of a circle is $x^{2}+y^{2}=36$.
(i) Write down its radius length.
(ii) Verify, by calculation, that the point $(2,3)$ is inside the circle.
(b) The points $(1,0)$ and $(4,4)$ are the end points of a diameter of a circle $C$.
(i) Find the coordinates of the centre of $C$.
(ii) Find the radius length of $C$.
(iii) Find the equation of $C$.
(c) A circle $K$ has equation $x^{2}+y^{2}=25$.
(i) $T$ is a tangent to $K$ at (3, 4).

Find the equation of $T$.
(ii) Find the equation of the other tangent to $K$ which is parallel to $T$.

## Answers

3 (a) (i) $r=6$
(b) (i) $\left(\frac{5}{2}, 2\right)$
(ii) $\frac{5}{2}$
(iii) $\left(x-\frac{5}{2}\right)^{2}+(y-2)^{2}=\frac{25}{4}$
(c) (i) $3 x+4 y-25=0$
(ii) $3 x+4 y+25=0$

