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 <i>C</i>.(i) Find the coordinates of the centre of <i>C</i>.
		(ii) Find the radius length of <i>C</i> .
		(iii) Find the equation of <i>C</i> .
	(c)	A circle <i>K</i> has equation $x^2 + y^2 = 25$.
		(i) T is a tangent to K at $(3, 4)$.
		Find the equation of <i>T</i> .
		(ii) Find the equation of the other tangent to K which is parallel to T .

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