THE CIRCLE (Q 3, PAPER 2)

2004

3	(a)	The circle <i>C</i> has equation $x^2 + y^2 = 36$.
		(i) Write down the radius of <i>C</i> .
		(ii) The radius of another circle is twice the radius of C . The centre of this circle is (0, 0). Write down its equation.
	(b)	A circle has equation $x^2 + y^2 = 13$.
		The points $a(2, -3)$, $b(-2, 3)$ and $c(3, 2)$ are on the circle.
		(i) Verify that [<i>ab</i>] is a diameter of the circle.
		(ii) Verify that $\angle acb$ is a right angle.
	(c)	K is a circle with centre $(-2, 1)$. It passes through the point $(-3, 4)$.
		(i) Find the equation of <i>K</i> .
		(ii) The point $(t, 2t)$ is on the circle <i>K</i> .
		Find the two possible values of t

Answers

3

(a) (i) r = 6

(ii) $x^2 + y^2 = 144$

(c) (i) $(x+2)^2 + (y-1)^2 = 10$ (ii) $t = \pm 1$