CIRCLE (Q 1, PAPER 2)

2010

1 (a) A circle with centre (3, –4) passes through the point (7, –3).
Find the equation of the circle.

(b) (i) Find the centre and radius of the circle $x^2 + y^2 - 8x - 10y + 32 = 0$.

(ii) The line $3x + 4y + k = 0$ is a tangent to the circle $x^2 + y^2 - 8x - 10y + 32 = 0$.
Find the two possible values of k.

(c) A circle has the line $y = 2x$ as a tangent at the point (2, 4). The circle also passes
through the point (4, –2). Find the equation of the circle.

ANSWERS

1 (a) $(x - 3)^2 + (y + 4)^2 = 17$
(b) (i) Centre (4, 5), $r = 3$ (ii) $k = -47, -17$
(c) $(x - 6)^2 + (y - 2)^2 = 20$