The line $y = 3x + 7$ intersects the circle $x^2 + y^2 - 4x - 6y - 7 = 0$ at the points P and Q.
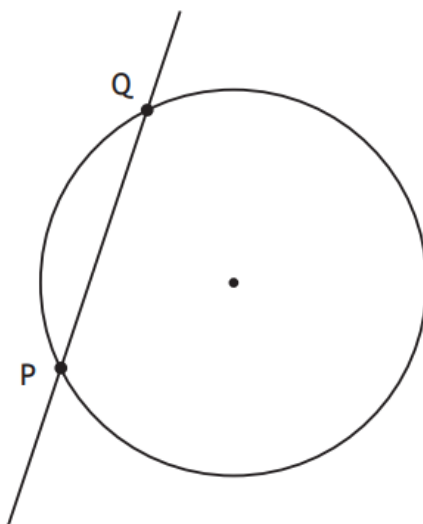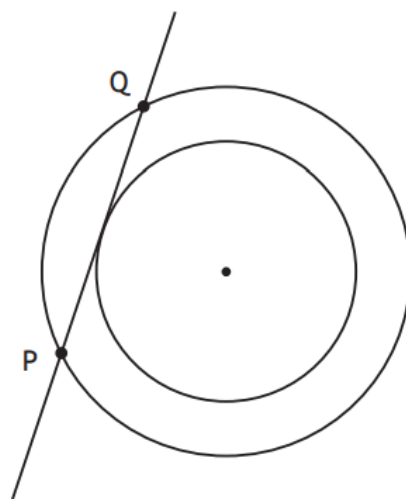

(a) Find the coordinates of P and Q.   **5**

PQ is a tangent to a second, smaller circle.
This circle is concentric with the first.

(b) Determine the equation of the smaller circle.   **4**

Answers:

(a)   P$(-2, 1)$ Q$(0, 7)$ (b) $(x - 2)^2 + (y - 3)^2 = 10$