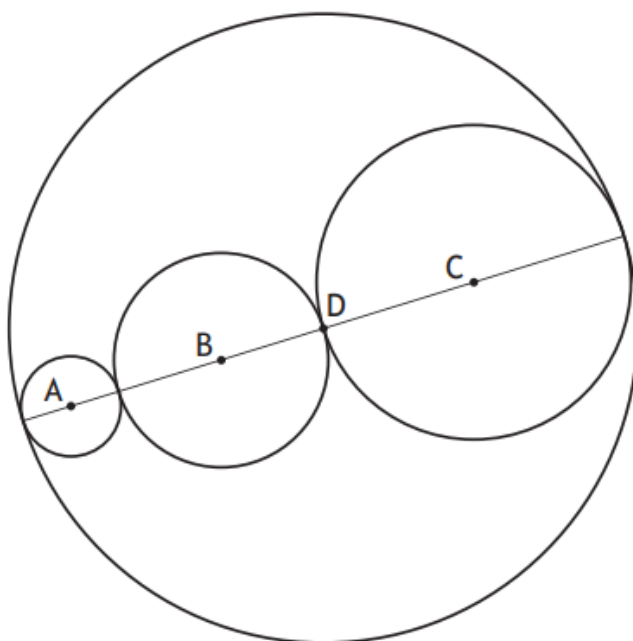(a) Show that the points A(−7, −2), B(2, 1) and C(17, 6) are collinear.   **3**

Three circles with centres A, B and C are drawn inside a circle with centre D as shown.

The circles with centres A, B and C have radii r_A, r_B and r_C respectively.

• $r_A = \sqrt{10}$

• $r_B = 2r_A$

• $r_C = r_A + r_B$

(b) Determine the equation of the circle with centre D.   **4**

Answers:

(a)   Show that any two gradients involving A, B and C are equal, and state common point B.

(b) $(x-8)^2 + (y-3)^2 = 360$