Higher Maths
SQA 2025 Paper 2
Question 14

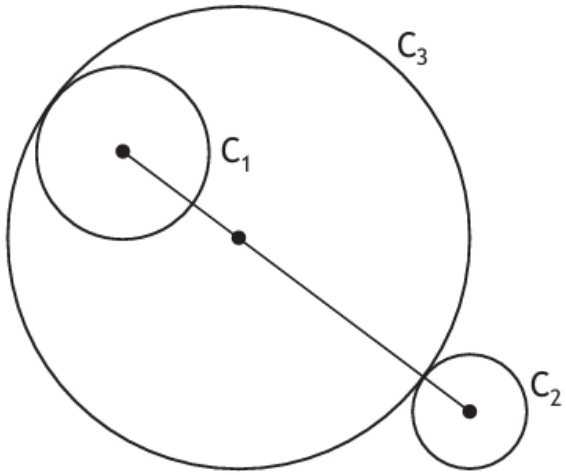
Circle C_1 has equation $(x+5)^2+(y-6)^2=9$.

(a) State the centre and radius of C_1. 2

Circle C_2 has equation $x^2+y^2-14x+6y+54=0$.

(b) State the centre and radius of C_2. 2

Circles C_1, C_2 and C_3 are touching as shown in the diagram.
The centre of circle C_3 lies on the line joining the centres of C_1 and C_2.



(c) Determine the equation of C_3. 3

Answers:

(a) Centre (–5, 6). Radius 3.

(b) Centre (7, –3). Radius 2.

(c) $(x+1)^2+(y-3)^2=64$