

Higher Maths  
SQA 2024 Paper 2  
Question 10



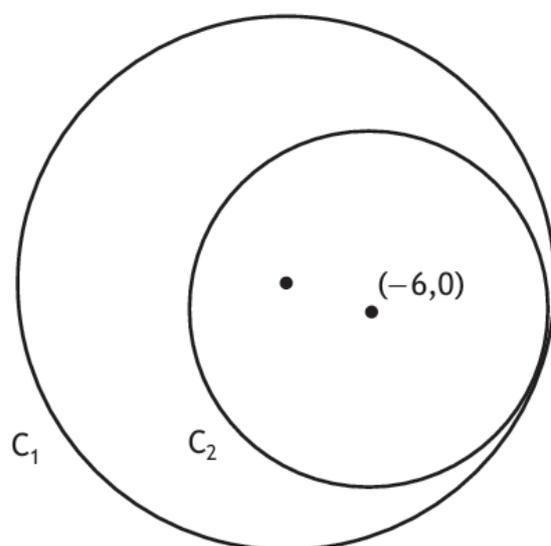
The circle  $C_1$  has equation  $x^2 + y^2 + 18x - 2y - 8 = 0$ .

(a) Find the centre and radius of  $C_1$ .

2

A second circle,  $C_2$ , touches  $C_1$  internally.

The centre of  $C_2$  is  $(-6, 0)$ .



(b) Determine the equation of  $C_2$ .

2

Answers:

(a) Centre:  
 $(-9, 1)$

Radius:  
 $\sqrt{90}$  or  $3\sqrt{10}$  or 9.48...

(b)  $(x+6)^2 + y^2 = 40$