

Higher Maths
SQA 2022 Paper 1
Question 14



C_1 is the circle with equation $(x-7)^2 + (y+5)^2 = 100$.

- (a) (i) State the centre and radius of C_1 . 2
(ii) Hence, or otherwise, show that the point $P(-2, 7)$ lies outside C_1 . 2

C_2 is a circle with centre P and radius r .

- (b) Determine the value(s) of r for which circles C_1 and C_2 have exactly one point of intersection. 2
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Answers:

- (a) (i) Centre $(7, -5)$. Radius 10.
(ii) Find distance from centre to P and state that it is greater than the radius.
(b) $r = 5$ or $r = 25$