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**