Circle C_1 has equation $(x-4)^2 + (y+2)^2 = 37$.
Circle C_2 has equation $x^2 + y^2 + 2x - 6y - 7 = 0$.

(a) Calculate the distance between the centres of C_1 and C_2. **3**

(b) Hence, show that C_1 and C_2 intersect at two distinct points. **3**

Answers:

(a) $\sqrt{50}$ or $5\sqrt{2}$ or 7.07…

(b)   State that the radius of C1 is $\sqrt{37}$.
       Calculate the radius of C_2 to be $\sqrt{17}$.
       Show that the distance between the centres is less than the sum of the radii.