



Leith Academy Higher Home Learning



THE CIRCLE

NON-CALCULATOR

- 1) Circle C_1 has equation $x^2 + y^2 - 6x + 8y - 12 = 0$ and circle C_2 has centre $(-2, 7)$. If both circles have the same radius work out the equation of circle C_2 .
- 2) The point $P(2, -3)$ lies on the the circle with equation $x^2 + y^2 + 2x + 10y + 13 = 0$. Work out the equation of the tangent to the circle at P .
- 3) Show that the line $y = 2x - 5$ is a tangent to circle $x^2 + y^2 + 4x - 2y - 15 = 0$ and find the coordinates of the point of contact.
- 4) State the centres and radii of the two circles $x^2 + y^2 + 6x + 2y - 259 = 0$ and $(x - 4)^2 + (y - 8)^2 = 25$ and show they touch internally.
- 5) Find the two points of contact between the circle $x^2 + y^2 + 3x - 6y + 5 = 0$ and the line $x = 7 - 2y$.