## **Subject: Maths**

## **Topic: Equation of a Circle and Tangent**

Topic/Skill	Definition/Tips	Example
1. Equation of a Circle	The equation of a circle, centre (0,0), radius r, is: $x^2 + y^2 = r^2$	5 (x,y) X
2. Tangent	A straight line that touches a circle at exactly one point, never entering the circle's interior.  A radius is perpendicular to a tangent at the point of contact.	$x^2 + y^2 = 25$
3. Gradient	Gradient is another word for slope. $G = \frac{Rise}{Run} = \frac{Change \ in \ y}{Change \ in \ x} = \frac{y_2 - y_1}{x_2 - x_1}$	We need to find the GRADIENT between A at $(3,-2)$ and B at $(-3,4)$ $m = y_2 - y_1$ $x_2 - x_1$ $m = 4 - 2$ $x_3 - 3$ $m = 6/6 = 1$
4. Circle Theorem 5	A tangent is perpendicular to the radius at the point of contact.	y = 5cm  (Pythagoras' Theorem)