3055 BA SANGAM COLLEGE

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WORKSHEET 14

School: Ba Sangam College   **Year / Level: 12**
Subject: Mathematics   **Name of Student: _____**

Strand	3 – Graphs
Sub strand	3.1 – Graphs and Intersections
Content Learning Outcome	➢ Studying and interpreting graphs

GRAPHS OF CIRCLES   (Ref: Year 12 Mathematics Pg 114 – 116)

Note: The equation of a circle at the centre of origin (0, 0) with the radius, r, is given as $\boxed{x^2 + y^2 = r^2}$

- The equation makes a circle as long as the exponents on x and y are both 2 (power 2) and the coefficients on x and y are both same (usually 1).
- The general equation of a circle with radius r and centre (a, b) is
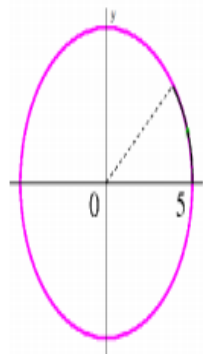
$$(x-a)^2 + (y-b)^2 = r^2$$

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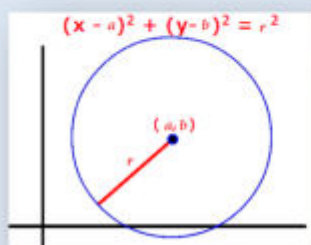
EXAMPLE 1: Sketch the graph of $x^2 + y^2 = 16$

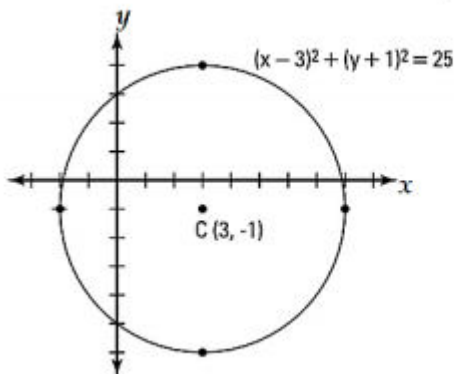Graphing a circle centered at the origin with $r^2 = 16$, thus r = 4.

$x^2 + y^2 = 16$
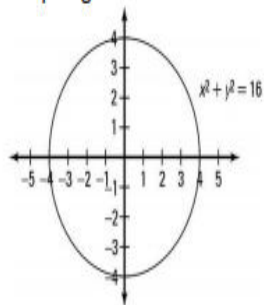
EXAMPLE 2: Write the equation of the graph

r = 5

$x^2 + y^2 = r^2 = 5^2$

$\therefore x^2 + y^2 = 25$

EXAMPLE 3: Sketch the graph of $(x-3)^2 + (y+1)^2 = 25$

ACTIVITY

1. **(4 marks)**	2. Sketch

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The coordinates of the end points of the diameter of a circle are (-4, 0) and (4, 0).

a) Write down the equation of this circle.
b) Determine the domain and the range

2. Sketch

a) **(2 marks)**

$x^2 + y^2 = 36$

b) **(4 marks)**

$(x-2)^2 + (y+3)^2 = 9$

And give the centre of the circle.

THE END