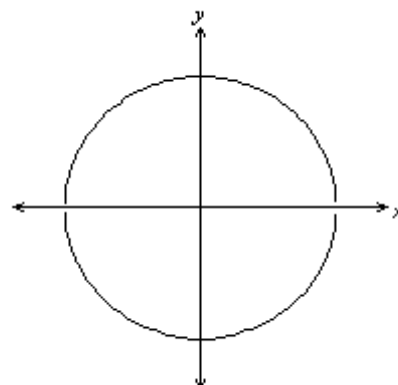


INVESTIGATION # 15

INVESTIGATING CIRCLES

What type of equation would graph as a circle?



- Complete the table of values below by finding ordered pairs (x,y) that make this equation true:

$$x^2 + y^2 = 16$$

x	-4	-3	-2	-1	0	1	2	3	4
y	0				4			2.65	

Now find as many more ordered pairs as are necessary and by plotting these ordered pairs on graph paper draw a graph to represent the equation.

- Is this the equation of a circle?
- Where is the centre of this circle?
- What is the radius of this circle?

In the following questions find only as many points as are necessary to get the graph.

- Repeat questions 1 to 4 for the equation: $x^2 + y^2 = 25$
- Repeat questions 1 to 4 for the equation: $2x^2 + 2y^2 = 50$
- Repeat questions 1 to 4 for the equation: $x^2 + 2y^2 = 50$
- Repeat questions 1 to 4 for the equation: $x^2 + y^2 - 4x = 25$
- Repeat questions 1 to 4 for the equation: $x^2 + y^2 - 4y = 25$
- Repeat questions 1 to 4 for the equation: $x^2 + y^2 - 4x - 4y = 25$

ASSESSMENT TASK

INVESTIGATING CIRCLES

1. Complete the table of values below by finding ordered pairs (x,y) that make this equation true:

$$x^2 + y^2 = 9$$

x	-3	-2	-1	0	1	2	3
y							

2. Draw a graph of this equation on graph paper.
3. What is the centre of the circle $x^2 + y^2 = 9$? _____
4. What is the radius of the circle $x^2 + y^2 = 9$? _____
5. What is the centre of the circle $x^2 + y^2 = 64$? _____
6. What is the radius of the circle $x^2 + y^2 = 64$? _____
7. Circle the equations below that would graph as circles:

$x^2 + y^2 = 36$

$x^2 + y^2 = 30$

$x^2 + y^2 = (-4)$

$3x^2 + 3y^2 = 27$

$x^2 + 3y^2 = 9$

$x^2 - y^2 = 9$

$x^2 + y^2 - 2x = 9$

$x^2 + y^2 - 4x + 6y - 9 = 0$

8. Write the equation for this circle:

