Name: ______ Period: _____ Date: _____
Circles in the Coordinate Plane Guide Notes

Two Basic Equation of the Circle

CENTER RADIUS FORM: $(x - a)^2 + (y - b)^2 = r^2$

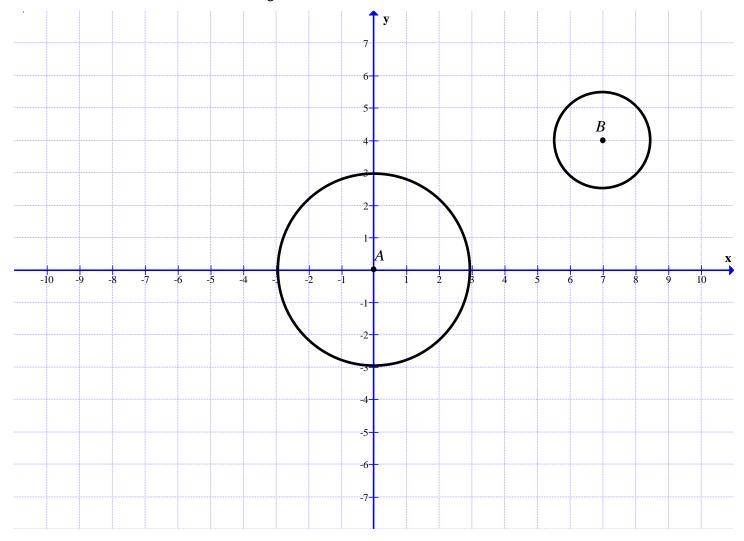
GENERAL FORM: $x^2 + y^2 + Ax + By + C = 0$

(a, b) are the coordinates of center of the circle; r is the radius; A, B, and C are constants. Where:

CENTER RADIUS AT THE ORIGIN: $x^2 + y^2 = r^2$

Sample Problem 1:

Find the center radius form of the following circle.



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Sample Problem 2: Find the equation of a circle given its center and radius.

3. Center at (0,0) radius is 4

4. Center at (5,2) radius is 5

Sample Problem 3: Find the equation of a circle given one of its point and the center.

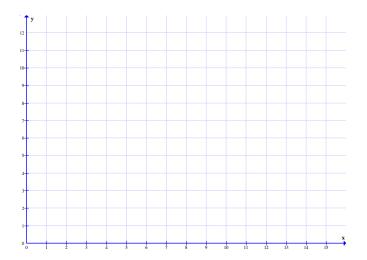
5. Center at (0,0) and point (3,2)

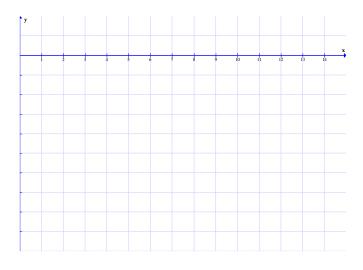
6. Center at (2,5) and point (2,8)

Sample Problem 4: Given the equation of the circle graph the circle.

$$(x-4)^2 + (y-6)^2 = 16$$

8.
$$(x-2)^2 + (y+3)^2 = 4$$





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Circles in the Coordinate Plane Guide Notes

Sample Problem 5: Changing general formula to center radius form.

9.
$$x^2 + y^2 + 8x - 2y - 8 = 0$$

10.
$$x^2 + 6x - 2y - y^2 + 2 = 0$$