7-1 Notes Circles   Name _____
Pre-Calculus

The standard form of a circle with a radius of r and a center at (h, k) is
$(x - h)^2 + (y - k)^2 = r^2$ * take opposite signs of h & k*

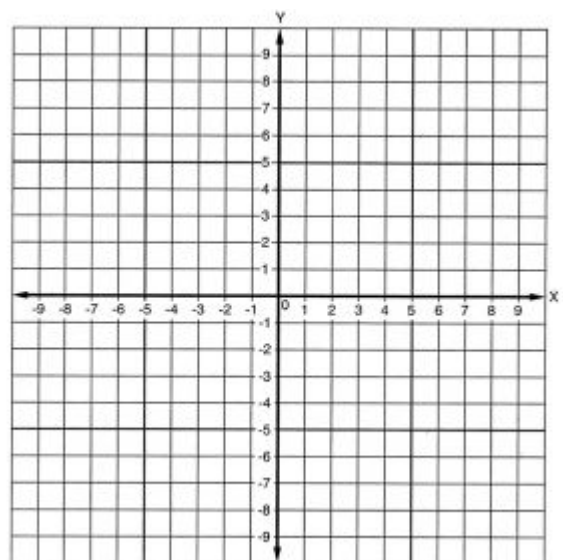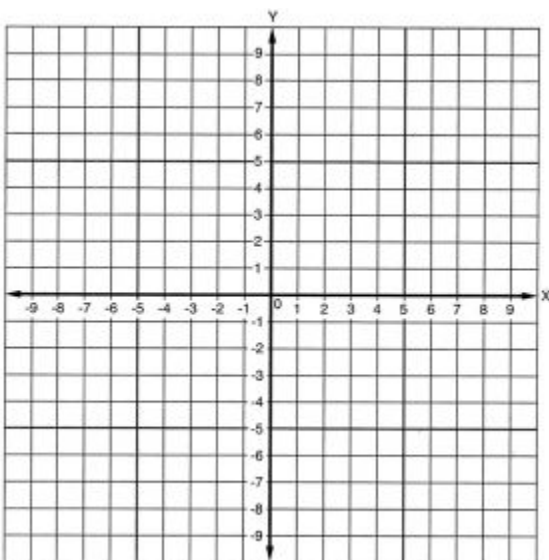## I. Writing the Equation
1. Write the equation of a circle with C (-5,0) and r=8.

2. Write the equation of a circle with C (-6,10) and r= 3.

3. Write the equation if $x^2 + y^2 = 16$ is translated 2 units right and 1 unit down.

4. Write the equation if $x^2 + y^2 = 1$ is moved left 5 units and up 3 units.
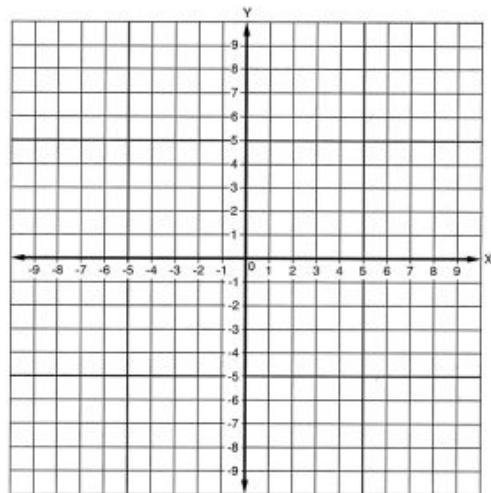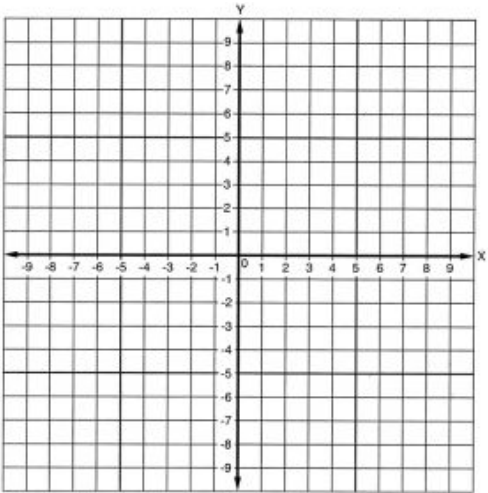

II. Graphing
1. $(x - 3)^2 + (y + 1)^2 = 4$ 2. $(x - 4)^2 + (y + 2)^2 = 49$

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

4. $x^2 - 6x + 6y + y^2 + 10 = 4$

III. Applications

1. Find the general equation of the circle whose center is (– 2, 3) and whose graph contains the point (1, 4).

2. Find the general equation of the circle whose center is (1, -2) and whose graph contains the point (4, -2).

3. Apollo 8 was the first manned space craft to orbit the moon at an average altitude of 185 km above the moon's surface. Determine an equation to model the orbit of the Apollo 8 command module if the radius of the moon is 1740 km. Let the center of the moon be at the origin.