Circles

You will need these formulas for this worksheet.

Standard Form of a Circle: $(x-h)^2+(y-k)^2=r^2$

Midpoint Formula: $\left(\frac{x_1+x_2}{2},\frac{y_1+y_2}{2}\right)$

Distance Formula: $d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

1. Find the equation of a circle where the center is at (5,-3), and a radius of 5 units.

2. Find the equation of a circle where the center is at (-6,4), and a radius of 8 units.

3. Find the equation of a circle where the center is at (5,0), and a radius of $4\sqrt{2}$ units.

4. Find the equation of a circle where the center is at (2,-4), and the point (6,1) rests on the circle.

5. Find the equation of a circle where the center is at (-2,3), and the point (1,4) rests on the circle.

6. Find the equation of a circle that has a diameter with endpoints of (-3,5) and (5,-9).

7. Find the equation of a circle that has a diameter with endpoints of (-1,-4) and (7,3).

Write each of the following in standard form. Identify the center of the circle as well as the length of the radius.

8. $x^2+y^2-16x+8y-3=0$

9. $x^2+y^2-4x-8y+2=0$

10. $x^2+y^2+5x-3y-4=0$

11. $2x^2+2y^2-16x+28y+10=0$

12. $3x^2+3y^2-12x+9=0$

13. $2x^2+2y^2-5y+2=0$

14. $4x^2+4y^2+10x+14y-18=0$

15. $3x^2+3y^2-2x-5y+2=0$