

NAME: _____

1. Describe a real-world situation where circles are used.

P.I. A2.A.47: Determine the center-radius form for the equation of a circle in standard form

2. Is the equation $x^2 - 4x + y^2 + 6y - 12 = 0$ the equation of a circle? Explain.

P.I. A2.A.48: Write the equation of a circle, given its center and a point on the circle

3. Describe how you can use the center and one point on a circle to write an equation for the circle.

4. Write the equation of a circle that does *not* have its center at the origin.

5. Write an equation of the circle with center (a, b) and radius r and then describe the points inside and outside the circle.

Answers may vary. Sample: to show the area affected by an earthquake or the area in which a siren or
[1] horn will be heard

[2] Yes, it can be written in the form $(x-2)^2 + (y+3)^2 = 25$ by completing the squares.

Answers may vary. Sample: The equation of a circle with center (h, k) and radius r is
 $(x-h)^2 + (y-k)^2 = r^2$. Find the radius of the circle by using the distance formula to find the distance
[3] between the center and the given point. Then substitute h , k and r in the equation in standard form.

[4] Answers may vary. Sample: $(x-2)^2 + y^2 = 4$

$(x-a)^2 + (y-b)^2 = r^2$; the points inside the circle are less than r units from the center and the points
[5] outside the circle are greater than r units from the center.
