

*P.I. G.G.71: Write the equation of a circle, given its center and radius or given the endpoints of a diameter*

1. Find the equation of the circle with center  $(4, -4)$  and radius of 4.

[A]  $(x-4)^2 + (y+4)^2 = 16$

[B]  $(x+4)^2 - (y-4)^2 = 4$

[C]  $(x+4)^2 + (y-4)^2 = 4$

[D]  $(x-4)^2 + (y-4)^2 = 16$

2. Find the equation of the circle with center  $(5, 3)$  and radius of 6.

3. Write the equation of the circle  $x^2 + y^2 = 4$  under the translation  $\langle 3, -2 \rangle$ .

4. The area of a circle is  $36\pi$  and its center is at  $(5, -1)$ . What is its equation?

[A]  $(x-5)^2 + (y+1)^2 = 36$

[B]  $x^2 + y^2 = 6$

[C]  $(x+5)^2 + (y-1)^2 = 6$

[D]  $(x-5)^2 + (y+1)^2 = 6$

[E] none of the above

5. The table gives the diameters of some of the planets.

Planet	Diameter(miles)
Venus	7,519
Mercury	3,032
Saturn	74,978

Use a center of  $(0, 0)$  for each planet. Write an equation of the cross section through the center of each planet.

6. Graph the pair of functions. Identify the conic section represented by the graph and write its equation in standard form.

$$y = \sqrt{49 - (x-2)^2}; \quad y = -\sqrt{49 - (x-2)^2}$$

7. Graph the given pair of functions. Identify the conic section represented by the graph and write its equation in standard form.

$$y = 5 + \sqrt{9 - (x+1)^2} \text{ and } y = 5 - \sqrt{9 - (x+1)^2}$$

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

8. A circle has center  $(4, 3)$  and contains the point  $(-1, 2)$ . Write the equation of the circle.

[1] A

[2]  $(x-5)^2 + (y-3)^2 = 36$

[3]  $(x-3)^2 + (y+2)^2 = 4$

[4] A

[5] Venus:  $x^2 + y^2 = 14,133,840.25$ ; Mercury:  $x^2 + y^2 = 2,298,256$ ; Saturn:  $x^2 + y^2 = 1,405,425,121$

[6] circle;  $(x-2)^2 + y^2 = 49$

[7] circle with center  $(-1, 5)$  and radius 3;  $(x+1)^2 + (y-5)^2 = 9$

[8]  $(x-4)^2 + (y-3)^2 = 26$