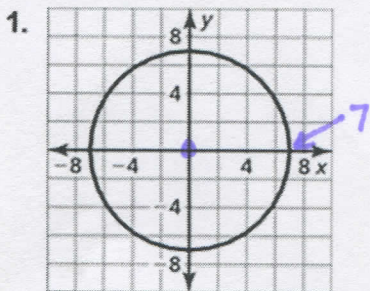


10.7 Circles in the Coordinate Plane CYU

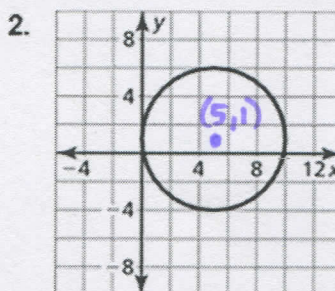
Use when you get it right all by yourself  
*S* Use when you did it all by yourself, but made a silly mistake  
*H* Use when you could do it alone with a little help from teacher or peer  
*G* Use when you completed the problem in a group  
*X* Use when a question was attempted but wrong (get help)  
*N* Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Writing equations of circles	1 - 4	5, 6	10
Distance formula	5, 6		10
Matching Graphs and equations	7 - 9		
Identifying the center (h, k)	1 - 6	7 - 9	10
Identifying the radius, r	1 - 4	2, 5 - 9	10
Real-World Application			11
Graphing circle		5, 6	

In Exercises 1-4, write the standard equation of the circle with the given center and radius.



$$x^2 + y^2 = 49$$



$$(x-5)^2 + (y-1)^2 = 25$$

3. A circle with center (0, 0) and radius 8

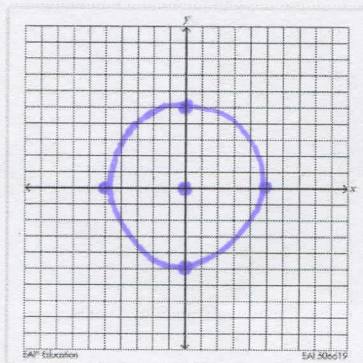
$$x^2 + y^2 = 64$$

4. A circle with center (0, -5) and radius 2

$$x^2 + (y+5)^2 = 4$$

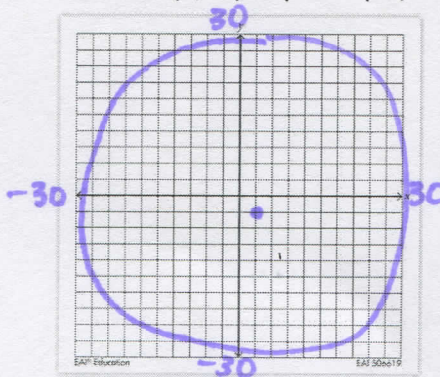
In Exercises 5 & 6, use the center and a point on the circle to write the standard equation of the circle, and then graph that circle.

5. center: (0, 0) & point: (3, -4)



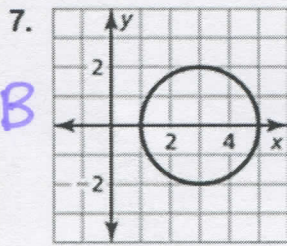
$$x^2 + y^2 = 25$$

6. Center: (3, -2) & point: (23, 19)

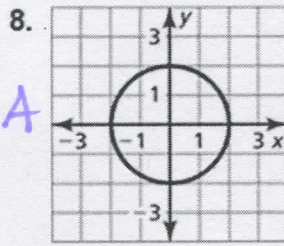


$$(x-3)^2 + (y+2)^2 = 841$$

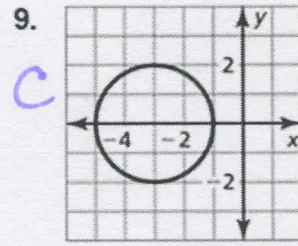
In Exercises 7–9, match each graph with its equation.



A.  $x^2 + y^2 = 4$



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



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

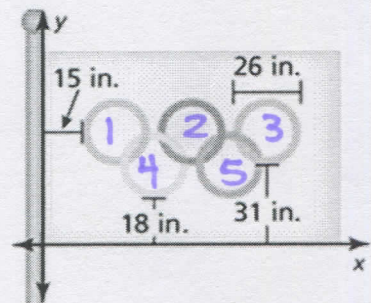
10. **Prove or Disprove** that the point  $(-3, 3)$  lies on the circle centered at the origin with the radius of 4 units.

*Disprove;  $(-3, 3)$  does not make a true statement.*

11. You are using a math software program to design a pattern for an Olympic flag. In addition to the dimensions shown in the diagram, the distance between the outer edges any two adjacent rings in the same row is 3 inches.

- a. Use the given dimensions to write equations representing the outer circles of the five rings. Use inches as units in a coordinate plane with the lower left corner of the flag on the origin.

*⊙1:  $(x-28)^2 + (y-44)^2 = 169$   
 ⊙2:  $(x-57)^2 + (y-44)^2 = 169$   
 ⊙3:  $(x-86)^2 + (y-44)^2 = 169$   
 ⊙4:  $(x-42.5)^2 + (y-31)^2 = 169$   
 ⊙5:  $(x-71.5)^2 + (y-31)^2 = 169$*



- b. Each ring is 3 inches thick. Explain how you can adjust the equations of the outer circles to write equations representing the inner circles.

*any equation from above = 100 instead of 169*

**CYU Reflection:** How far can you go: basic, intermediate, or advanced?

**Rate your mastery level!**

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

