Circles

**April 2015**

30. The circle in the standard (x,y) coordinate plane below has center (-8.5, 7.5) and has radius 5 coordinate units.

Which of the following is an equation of this circle?

1. (x - 8.5)2 + (y + 7.5)2 = 10
2. (x + 8.5)2 + (y - 7.5)2 = 10
3. (x - 8.5)2 + (y + 7.5)2 = 25
4. (x + 8.5)2 + (y - 7.5)2 = 25
5. (x + 8.5)2 + (y + 7.5)2 = 25

[PICTURE]

31. The circle in the standard (x,y) coordinate plane below has center (-8.5, 7.5) and has radius 5 coordinate units.

What is the area, in square coordinate units, of this circle?

1. (5/2)π
2. (25/2)π
3. 10π
4. 25π
5. 100π

[PICTURE]

44. Points O(0,0) and B(0,3) below lie in the standard (x,y) coordinate plane. The collection of all points such that each is twice as far from B as from O forms a circle. The point (rad3, 0) is 1 point on the circle. What are the coordinates of the center of that circle?

1. ( (rad3)/2 , 3/2)
2. (0, 3/2)
3. (0, 1)
4. (0, -1)
5. (0, -3)

\*\*\*\*picture\*\*\*\*

**June 2015**

24. The circle shown below has below has diameter (line)AD, and points B and C lie on the circle. The measure of (angle)CAD is 30°, and the measure of minor arc (arc)CD is 60°. What is the measure of minor arc (arc)AC?

1. 75°
2. 90°
3. 105°
4. 120°
5. 150°

[PICTURE]

27. Graphed in the same standard (x,y) coordinate plane are a circle and a parabola. The circle has radius 3 and center (0, 0). The parabola has vertex (-3, -2), has a vertical axis of symmetry, and passes through (-2, -1). The circle and the parabola intersect at how many points?

1. 0
2. 1
3. 2
4. 3
5. 4

35. In the figure shown below, ABCD is a rectangle, EFGH is a square, and (line)CD is the diameter of a semicircle. Points K is the midpoint of (line)CD. Point J is the midpoint of both (line)AB and (line)EF. Points E and F lie on (line)AB. The 3 given lengths are in meters.

What is the length, in meters, of arc (arc)CD?

1. 2.5π
2. 5π
3. 6.25π
4. 10π
5. 25π

[PICTURE]

58. In the circle with center D shown below, the length of radius (line)CD is 4 cm, the length of (line)BC is 1 cm, and (line)BC is perpendicular to radius (line)AD at B. When (Angle)ADC is measured in degrees, which of the following expressions represents the length, in centimeters of (arc)AC?

1. (π/45)(sin-1(¼))
2. (π/45)(cos-1(¼))
3. (2π/45)(sin-1(¼))
4. (2π/45)(cos-1(¼))
5. (2π/45)(tan-1(¼))

\*\*\*\*\*\*picture\*\*\*\*\*

**December 2015**

8. The circular spinner dial for a new board game is divided into 6 congruent sectors. What is the arc measure, in degrees, of each sector?

1. 30°
2. 36°
3. 45°
4. 60°
5. 72°

26. The diameter of a circle is 6 feet. What is the area, in square feet, of the circle?

1. 3π
2. 6π
3. 9π
4. 36π
5. 144π

38. In standard (x,y) coordinate plane below, a circle has a radius of r coordinate units and passes through the origin, O. The circle has diameter (line)OS, where S lies on the negative y-axis. In terms of r, what are the coordinates of S?

1. (0, -2πr)
2. (0, -2r)
3. (0, -r)
4. (0, -0.5r)
5. (0, r)

\*\*\*\*picture\*\*\*

**June 2016**

33. The circumference of a circle is 20cm. What is the length, in centimeters, of the *radius* of the circle?

1. π
2. 10/π
3. 20/π
4. 20
5. 20π

**December 2016**

47. A circle with radius 10 cm is divided into 3 congruent arcs. What is the length, in centimeters, of each of the 3 arcs?

1. (10π)/3
2. (20π)/3
3. 10π
4. (40π)/3
5. 20π

60. The circle with equation x2 + (y - 1)2 = 1 is graphed in the standard (x,y) coordinate plane below. Suppose the circle rolls along the positive x-axis for 2 rotations and then stops. Which of the following is an equation of the circle in its new position?

1. (x + 2)2 + (y - 1)2 = 1
2. (x + 2π)2 + (y - 1)2 = 1
3. (x + 4π)2 + (y - 1)2 = 1
4. (x - 2π)2 + (y - 1)2 = 1
5. (x - 4π)2 + (y - 1)2 = 1

\*\*\*\*picture\*\*\*\*

**June 2017**

52. In the standard (x,y) coordinate plane, the circle centered at (1,3) that passes through (4,7) is the set of all points are:

1. 5 coordinate units from (1,3).
2. 5 coordinate units from both (1,3) and (4,7).
3. 5 coordinate units from the line segment with endpoints (1,3) and (4,7).
4. Equidistant from (1,3) and (4,7).
5. Equidistant from the line segment with endpoints (1,3) and (4,7).