Geometry – Honor

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Circle**

What do I know about the circle?

1. What is the equation of the circle?
2. What is (h, k) in the equation of the circle?
3. What is the relationship between the central angle and its arc?
4. How do I find arc length?
5. What do I know about the inscribed triangle that is formed with the diameter?
6. How do I find sector area?
7. How do I find the angle inside the circle formed by 2 secant lines?
8. How do I find the angle outside the circle formed by 2 secant lines? 2 tangent lines? Or a tangent and secant line?
9. What is the relationship of the interior angles of a quadrilateral formed inside the circle?
10. Describe the relationship between the tangent line and the radius or the diameter?
11. If the radius bisected the chord, what does that mean?
12. Is there anything else about the circle that is not mentioned?



**Given:** AD = 12 inches, AFD is a semicircle, central angle APB = 55º, measure angle FDA = 36, and APC is a right angle.

**Find**

1. Arc AB = \_\_\_\_\_\_\_\_\_
2. Arc FA = \_\_\_\_\_\_\_
3. Line segment FA = \_\_\_\_\_\_\_\_
4. Line segment FD = \_\_\_\_\_\_\_\_\_
5. Sector area APB = \_\_\_\_\_\_\_\_\_\_\_
6. Arc length BC = \_\_\_\_\_\_\_\_\_



**Given**: BCD = 27º, BD = 40º, AGB = 55º

**Find:**

1. Arc FE = \_\_\_\_\_\_\_\_\_\_
2.  FAE = \_\_\_\_\_\_\_\_\_\_\_
3. EBF = \_\_\_\_\_\_\_\_\_\_\_\_\_



**Given:** AGF = 120º, radius FG = 5 feet, FED = 85º, FE = 10p – 5 and DE = 9p, HC = 4.

**Find:**

1. Sector area AGF = \_\_\_\_\_\_\_\_\_\_\_
2. Line segment GH = \_\_\_\_\_\_\_\_\_\_
3. Line segment BH = \_\_\_\_\_\_\_\_\_\_
4. Arc FD = \_\_\_\_\_\_\_\_\_\_\_
5. FE = \_\_\_\_\_\_\_\_\_\_



Given: Central angle APB = 70º, radius PB = 15 yards, arc BC = 64, arc DC = 80, PFE = 33º

Find:

1. Line segment FE = \_\_\_\_\_\_\_\_\_
2. Line segment HP = \_\_\_\_\_\_\_\_\_\_
3. Shaded area = \_\_\_\_\_\_\_\_\_\_\_\_
4. BCD = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Geometry – Honor

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Circle**

What do I know about the circle?

1. What is the equation of the circle?

**(x-h)2 + (y-k)2 = r2**

1. What is (h, k) in the equation of the circle?

**(h,k) is the center of the circle.**

1. What is the relationship between the central angle and its arc?

**Central angle has the same measurement of its arc.**

1. How do I find arc length?

**Arc length = 2**$π$**r(**$\frac{m°}{360}$**) unit**

1. What do I know about the inscribed triangle that is formed with the diameter?

**The inscribed angle formed a right triangle with the diameter.**

1. How do I find sector area?

**Sector area =** $π$**r2(**$\frac{m°}{360}$**) unit square**

1. How do I find the angle inside the circle formed by 2 secant lines?

**The angle measure =** $\frac{1}{2}$**(the sum of the 2 arcs)**

1. How do I find the angle outside the circle formed by 2 secant lines? 2 tangent lines? Or a tangent and secant line?

**The angle measure =** $\frac{1}{2}$**(the difference of the 2 arcs)**

1. What is the relationship of the interior angles of a quadrilateral formed inside the circle?

**The opposite angles of the quadrilateral formed inside the circle are supplementary.**

1. Describe the relationship between the tangent line and the radius or the diameter?

**The radius and the tangent line are perpendicular at the point of tangency.**

1. If the radius bisected the chord, what does that mean?

**When the radius bisected the chord, it also formed the right angle.**

1. Is there anything else about the circle that is not mentioned?

**A piece of info is missing for 1 circle, HC = 4.**



**Given:** AD = 12 inches, AFD is a semicircle, central angle APB = 55º, measure angle FDA = 36, and APC is a right angle.

**Find**

1. Arc AB = \_\_**55º**\_\_\_\_
2. Arc FA = \_\_**72º**\_\_\_
3. Line segment FA = \_\_**7 in.**\_\_\_
4. Line segment FD = \_\_\_**9.7 in.**\_\_\_
5. Sector area APB = \_\_\_**5.5**$π$ **in.2 or 17.27 in. sq.**\_\_\_\_
6. Arc length BC = \_\_\_**1.2**$π$ **or 3.7 in.**\_\_\_\_\_\_



**Given**: BCD = 27º, BD = 40º, AGB = 55º

**Find:**

1. Arc FE = \_\_\_**94º**\_\_\_\_
2.  FAE = \_\_\_\_\_**47º**\_\_\_\_\_\_
3. EBF = \_\_\_\_**47º**\_\_\_\_\_\_



**Given:** AGF = 120º, radius FG = 5 feet, FED = 85º, FE = 10p – 5 and DE = 9p, HC = 4.

**Find:**

1. Sector area AGF = \_\_\_**8.3**$π$ **ft2 or 26.2 sq ft**\_\_\_\_\_
2. Line segment GH = \_\_**3**\_\_\_\_\_\_
3. Line segment BH = \_\_**2**\_\_\_\_\_\_
4. Arc FD = \_\_\_\_**95º**\_\_\_\_\_
5. FE = \_\_\_**45**\_\_\_\_\_



Given: Central angle APB = 70º, radius PB = 15 yards, arc BC = 64, arc DC = 80, PFE = 33º

Find:

1. Line segment FE = \_\_\_**23.1 yd**\_\_\_
2. Line segment HP = \_\_\_**4.6 yd**\_\_\_\_\_
3. Shaded area = \_\_\_**31.6 yd2**\_\_\_\_\_\_
4. BCD = \_\_\_\_\_**108**\_\_\_\_\_\_\_\_