Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Dissecting a Circle!**

Directions: Compare and contrast the pictures of the circles to fill in the blanks of the definitions for the terms below. (The first few terms have already been given to you)

e

.

A

h

f

a

X

W

S

O

I

H

F

g

d

Y

R

P

J

G

.

.

.

b

V

L

K

E

C

B

i

c

U

Q

N

M

D

T

Circle: A **circle** is the set of points in a plane at a *given distance* from a *given point* in that plane. The *given point* is the **center** of the circle. The *given distance* is the **radius**.

Center: Points F, E, O, P, Q, and “g” are NOT center points. Points B, K, R, and “b” ARE center points.

Radius: Segments AC, OP, XY, and “ac” are NOT radii (plural). Segments BC, KL, RS, and “bc” ARE radii.

In the circles below, draw your own chords, secants, diameters, tangents, and points of tangency!

1. Chord: Segments AB, JK, QR, and “ab” are NOT chords.

Segments AC, DE, OP, VW, XY, “fg” and “hi” ARE chords.

A **chord** is a \_\_\_\_\_\_\_\_\_ whose endpoints \_\_\_\_ on a circle.

2. Secant: Lines HI, MN, TU, and “de” are NOT secants.

Lines DE, OP, VW, and “fg” ARE secants.

A **secant** is a \_\_\_\_\_\_ that contains a \_\_\_\_\_\_\_\_\_\_.

3. Diameter: Segments FG, MN, UT, and “fg” are NOT diameters.

Segments AC, JL, QS, and “ac” ARE diameters.

A **diameter** is a \_\_\_\_\_\_\_ that contains the \_\_\_\_\_\_\_\_\_ of a circle.

4. Tangent: Lines DE, OP, VW, and “fg” are NOT tangents.

Lines HI, MN, TU, and “de” ARE tangents.

A **tangent** is a \_\_\_\_\_\_ in the plane of a circle that intersects the circle in exactly \_\_\_\_\_ point(s).

5. Point of tangency: Points A, B, M, R, Q, and “c” are NOT points of tangency. Points H, N, U, and “d” ARE points of tangency.

The **point of tangency** is the point where the \_\_\_\_\_\_\_\_ line and the \_\_\_\_\_\_\_\_\_ intersect at exactly \_\_\_\_\_\_ point(s).

[Label a point of tangency on the tangent line that you created.]

Directions: Once again, compare and contrast the pictures of the circles to fill in the blanks of the definitions for the terms below.

NONE of these circles are congruent.

These two circles are congruent.

8

3

These two circles are congruent.

.

.

4

.

.

6

5

6

.

.

.

4

6. Congruent circles: **Congruent circles** are circles that have congruent \_\_\_\_\_\_\_\_\_\_\_\_.

These two circles are NOT concentric.

These three circles are concentric.

These two circles are concentric.

.

These two circles are NOT concentric.

7. Concentric circles: **Concentric circles** are circles that lie in the same plane and have the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

8. Inscribed and Circumscribed: A polygon is **inscribed in a circle** and the circle is **circumscribed about the polygon** when each \_\_\_\_\_\_\_\_\_\_\_ of the polygon lies on the circle.

**What about Spheres?**

9. Sphere: A **sphere** with center *O* and radius *r* is the set of all points in space at a distance *r* from point *O*.



10. Concentric spheres: **Concentric spheres** are spheres that have the same \_\_\_\_\_\_\_\_\_\_\_. [Compare to concentric circles.]

CW: pg. 330 #1-8, 10, 11 HW: pg. 330-331 #2-18 even