Math 3 - Unit 6 Test Review Name: _____

Test Review 1

____ 1. Write the standard equation for the circle with center (2, 7), $r = 4$

a. $(x-7)^2 + (y-2)^2 = 16$
b. $(x-2)^2 + (y-7)^2 = 4$
c. $(x-2)^2 + (y-7)^2 = 16$
d. $(x+2)^2 + (y+7)^2 = 4$

____ 2. Write the standard equation for the circle with center (−6, −8), that passes through (0, 0)

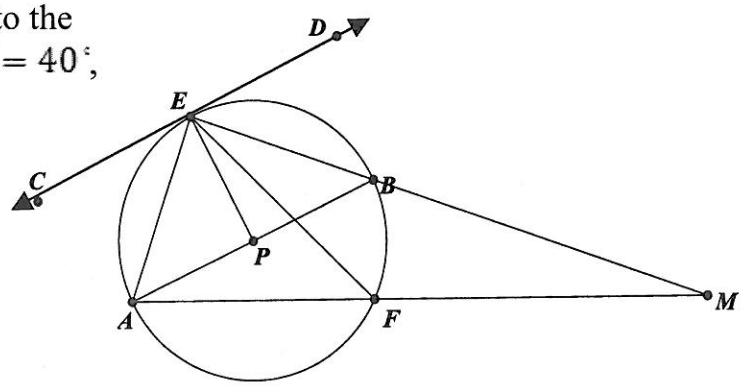
a. $(x-6)^2 + (y-8)^2 = 10$
b. $(x-6)^2 + (y-8)^2 = 196$
c. $(x+6)^2 + (y+8)^2 = 14$
d. $(x+6)^2 + (y+8)^2 = 100$

____ 3. Find the center and radius of the circle with equation $(x+9)^2 + (y+5)^2 = 64$.

a. center (5, 9); $r = 8$
b. center (9, 5); $r = 64$
c. center (–9, –5); $r = 64$
d. center (–9, –5); $r = 8$

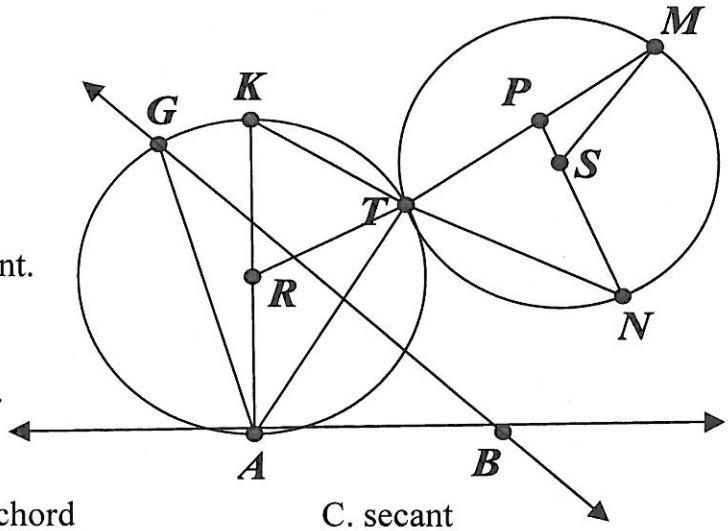
In the figure, $\overline{AB}$ is a diameter, P is the center of the circle, $\overleftrightarrow{CD}$ is a tangent to the circle at E. If $m\overset{\frown}{BE} = 100°$ and $m\overset{\frown}{BF} = 40°$, find the following measures:

4. $m\overset{\frown}{AF}$
5. $m\overset{\frown}{AE}$
6. $m\angle EPB$
7. $m\angle CEA$
8. $m\angle M$
9. $m\angle EAB$
10. $m\angle PEF$
11. $m\angle AEP$
12. $m\angle EFM$
13. $m\angle DEF$
14. $m\angle BAF$



Matching. In the figure the two circles, with centers R and S, intersect only at T and $\overline{AB} \perp \overline{RA}$.

15. $\overleftrightarrow{AB}$ is a _____.
16. $\overline{KA}$ is a _____.
17. $\overline{NS}$ is a _____.
18. $\overleftrightarrow{BG}$ is a _____.
19. Circles R and S are _____ tangent.
20. $\overline{KT}$ is a _____.
21. R is a _____.
22. Point P is a(n) _____ of circle S.
23. Point B is a(n) _____ of circle

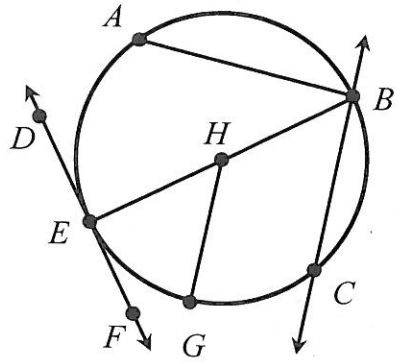


A. diameter
B. chord
C. secant
D. radius
E. center of circle
F. tangent
G. interior point
H. exterior point
I. externally
J. internally

Review of Circles (Parts, Arcs & Angles, Tangents) Name: _____

PARTS OF CIRCLES

1 **Directions:** Using the circle below, give an example of each part.



a) Center: _____

b) Chord: _____

c) Diameter: _____

d) Radius: _____

e) Central Angle: _____

f) Inscribed Angle: _____

g) Major Arc: _____

h) Minor Arc: _____

i) Semicircle: _____

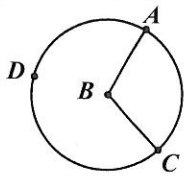
j) Tangent: _____

k) Point of Tangency: _____

l) Secant: _____

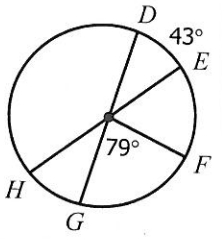
CENTRAL ANGLES

A central angle is an angle with a vertex on the center of a circle.



The sum of all central angles in a circle is _____.

2. Find each arc measure.



a) $m\widehat{EF}$ _____

b) $m\widehat{DH}$ _____

c) $m\widehat{GE}$ _____

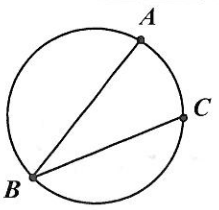
d) $m\widehat{HF}$ _____

e) $m\widehat{EDG}$ _____

f) $m\widehat{HDF}$ _____

INSCRIBED ANGLES

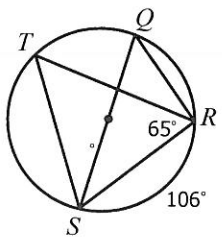
An inscribed angle is an angle with a vertex on the edge of the circle.



The measure of an inscribed angle is equal to half the measure of the intercepted arc.

$$m\angle ABC = \frac{1}{2}\, m\widehat{AC}$$

3. Find each measure.



a) $m\angle STR$ _____

b) $m\angle QRS$ _____

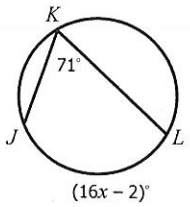
c) $m\widehat{TQ}$ _____

d) $m\angle SQR$ _____

e) $m\widehat{ST}$ _____

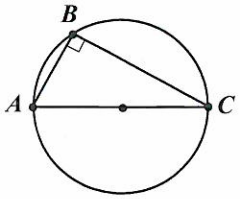
f) $m\widehat{QR}$ _____

4. Find the value of x.



INTERCEPTING A DIAMETER

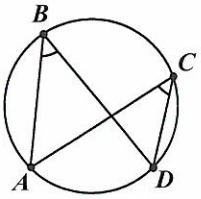
An inscribed angle that intercepts a diameter or semicircle is equal to 90°.



$m\angle ABC = 90°$

OVERLAPPING ARCS

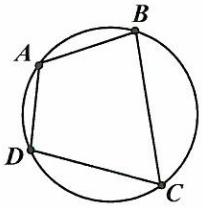
If two inscribed angles intercept the same arc, then the angles are congruent.



$m\angle ABD = m\angle ACD$

INSCRIBED QUADRILATERALS

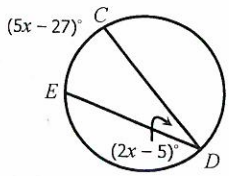
If a quadrilateral is inscribed in a circle, then its opposite angles are supplementary.



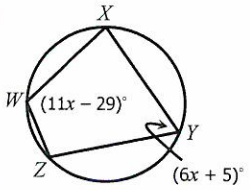
$m\angle A + m\angle C = 180°$

$m\angle B + m\angle D = 180°$

5. Find $m\widehat{EC}$.

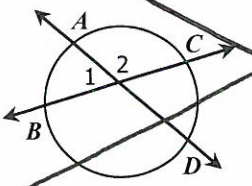


6. Find $m\angle W$.



INTERIOR INTERSECTIONS (omit)

Two Chords (or Secants)

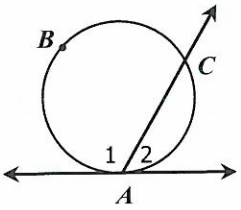


$m\angle 1 = \frac{1}{2}(m\widehat{AB} + m\widehat{CD})$

$m\angle 2 = \frac{1}{2}(m\widehat{AC} + m\widehat{BD})$

ON THE CIRCLE INTERSECTION

Secant & Tangent

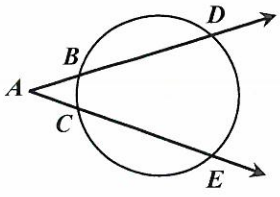


$m\angle 1 = \frac{1}{2}(m\widehat{ABC})$

$m\angle 2 = \frac{1}{2}(m\widehat{AC})$

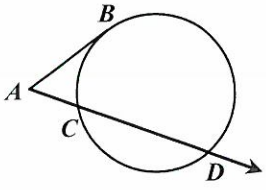
EXTERIOR INTERSECTIONS

Two Secants



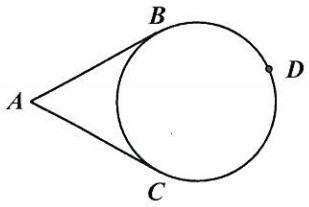
$m\angle A = \frac{1}{2}(m\widehat{DE} - m\widehat{BC})$

Secant & Tangent



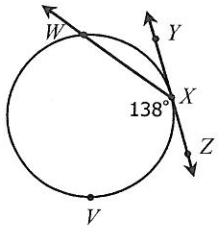
$m\angle A = \frac{1}{2}(m\widehat{BD} - m\widehat{BC})$

Two Tangents

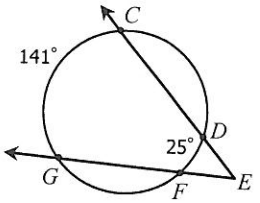


$m\angle A = \frac{1}{2}(m\widehat{BDC} - m\widehat{BC})$

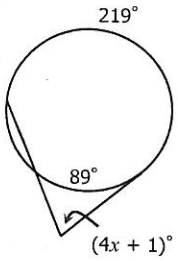
7. Find $m\overset{\frown}{WX}$



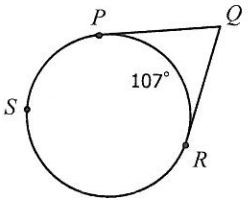
8. Find $m\angle E$

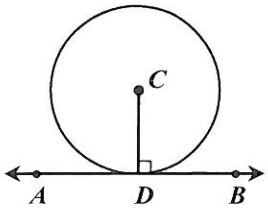
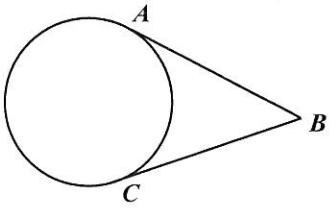
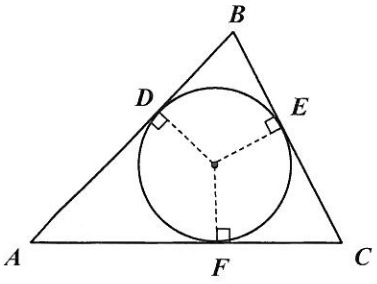


9. Find the value of x.

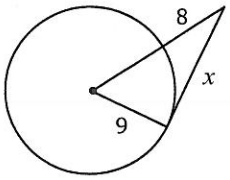


10. Find $m\angle Q$

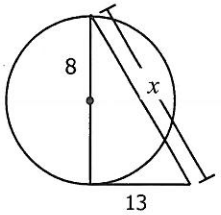


TANGENTS	CONGRUENT TANGENTS	CIRCUMSCRIBED POLYGONS
A line is tangent to a circle if and only if it is perpendicular to a radius drawn to the point of tangency.  $\overleftrightarrow{AB} \perp \overline{CD}$	If two segments from the same exterior point are tangent to a circle, then they are congruent.  $AB = BC$	If a polygon is circumscribed around a circle, then all sides are tangent to the circle. 

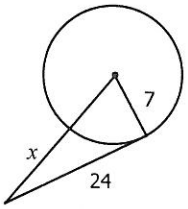
11. Find the value of x.



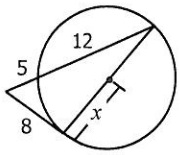
12. Find the value of x.



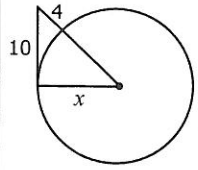
13. Find the value of x.



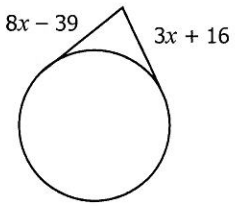
14. Find the value of x.



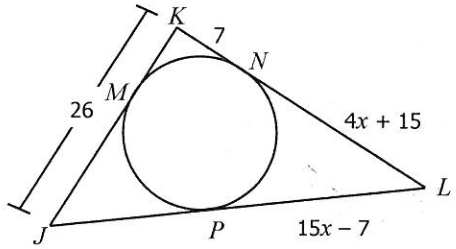
15. Find the value of x.



16. Find the value of x.



17. Find the perimeter of ΔJKL .



18. Write in general form : $(x+5)^2 + (y-3)^2 = 4$

19. Write in standard form: $x^2 + y^2 - 6x + 8y + 3 = 0$