

Geometry

Name _____

10.2 Measuring Angles and Arcs

Date _____ Hour _____

Th'm 10.1 – In a circle, or in congruent circles, two arcs are congruent if and only if their corresponding central angles are congruent

Postulate 10.1 (Arc Addition Postulate) – the measure of an arc formed by two adjacent arcs is the sum of the measures of the two arcs

arc length -----> length = some fraction of circumference

$$l = \frac{\theta}{360} \cdot C$$

Find these for $\odot M$.

1) YO

2) MN

3) $m\angle YMN$

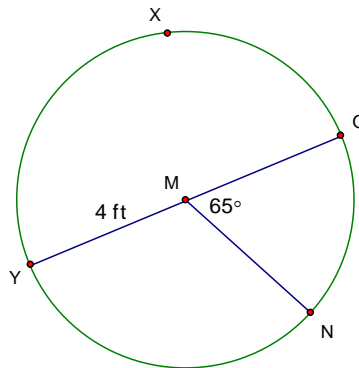
4) $m\widehat{ON}$

5) $m\widehat{YN}$

6) $m\widehat{YXO}$

7) circumference of $\odot M$

8) length of \widehat{YXO}

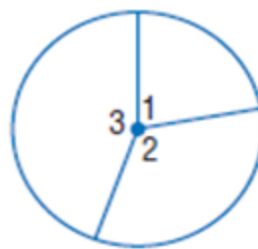


9) What makes two arcs congruent?

10) Some irrigation systems spray water in a circular pattern. You can adjust the nozzle to spray in certain directions. The nozzle in the diagram is set so it does not spray the house even though it is very close to the corner. If the spray has a radius of 12 feet, what is the length of the arc that the spray creates?



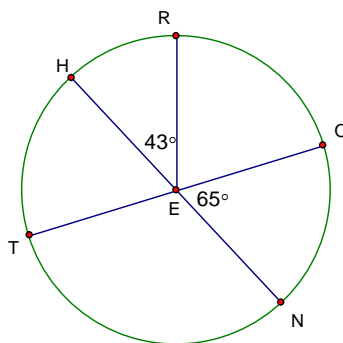
- 11) The circle to the right has central angles in the ratio 2:3:4.
Find the measure of each angle.



Determine whether the following statements are always, sometimes, or never true.

- 12) The measure of a major arc is greater than 180.
13) The central angle of a minor arc is an acute angle.
14) The sum of the measures of the central angles of a circle depends on the radius length.
15) The semicircles of two congruent circles are congruent.
16) Suppose the diameter of the larger wheel of a Conestoga wagon is 5 feet. If the horses get restless and the larger wheel turns forward a quarter turn, then how far forward will the wagon roll?

- 17) The diameter of this circle is 36 feet.
How long is the minor arc from R to O?



For this circle \overline{VY} and \overline{WU} are diameters. $\angle WZX \cong \angle XZY$. Find these.

- 18) $m\widehat{UY}$
19) $m\widehat{WV}$
20) $m\widehat{WX}$
21) $m\widehat{XY}$
22) $m\widehat{WUX}$

