

Geometry – Circles and their Properties
15d Homework: Circular Arc Length & Radians

Name _____
Pd _____ Date _____

1. Circle R has a circumference of 200 centimeters, $m\angle GRH = 36^\circ$ and $m\angle ERO = 45^\circ$.

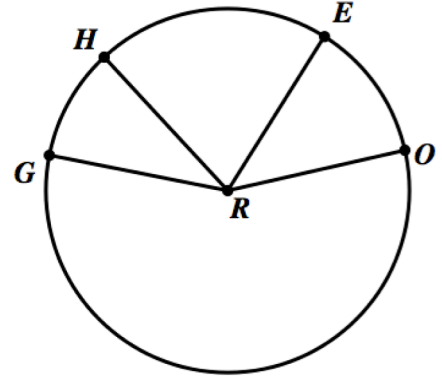
A. $m\widehat{GH} = \underline{\hspace{2cm}}^\circ$ and $m\widehat{EO} = \underline{\hspace{2cm}}^\circ$

B. \widehat{GH} represents what fraction of the entire circle?

C. What is the arc LENGTH of \widehat{GH} (measured in **cm.**)?

D. \widehat{EO} represents what fraction of the entire circle?

E. What is the arc LENGTH of \widehat{EO} (measured in **cm.**)?



2. Convert the following degrees to radians and radians to degrees. Be sure to indicate the units, either degrees or radians (use the abbreviation “**rad**” for radians).

A. $40^\circ = \underline{\hspace{2cm}}$

B. $\frac{\pi}{10} = \underline{\hspace{2cm}}$

C. $\frac{11\pi}{15} = \underline{\hspace{2cm}}$

D. $150^\circ = \underline{\hspace{2cm}}$

3. A circle has a radius that measures 21 centimeters. What is the length of the arc between two points on the circle that are $\frac{7\pi}{18}$ apart? Express your answer in exact form and as a decimal rounded to the nearest hundredths place.
4. Colby walked along the circumference of a swimming pool (in the shape of a circle) that has a diameter of 60 feet. From the point that he started to the point that he stopped, he estimated he walked along a circular arc that measured 300° . Determine the distance that Colby walked along this arc. Express your answer in **radians** and **degrees** in both exact form and as a decimal rounded to the nearest hundredths place.