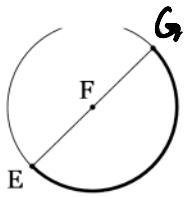
Notes Sheet

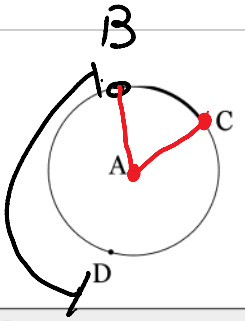
Tuesday, March 03, 2015
7:43 AM

Notes



10.3 - Arcs of a Circle

$\overline{BC}$

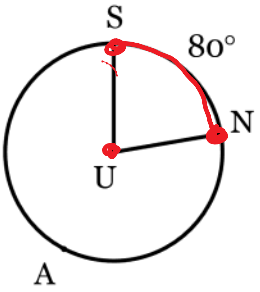


Word	Notation	My definition
arc		
central angle	∠BAC	
minor arc	$\overset{\frown}{BC}$	
major arc	$\overset{\frown}{BDC}$	
semicircle		$\frac{1}{2}$ Circle ⇒ 180°

∠SUN is a 80° ∠ ⊙U

The measure of a minor arc is: 80°

The measure of a major arc is: 280°

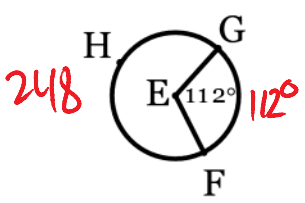


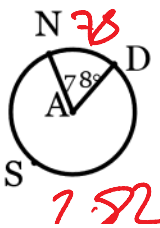
$\overset{\frown}{SN}$ = ∠SUN $\overset{\frown}{SAN}$ = 360 − $\overset{\frown}{SN}$

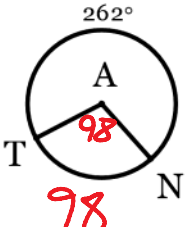
360 − ∠SUN

.

Find the measure the missing major arcs, minor arcs, and/or central angles








F

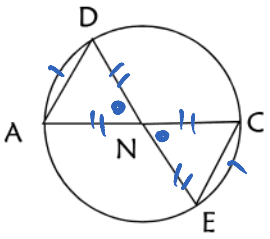

S
282


T
98
N

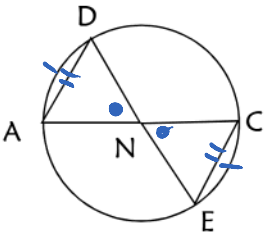
Relationships Among Congruent Arcs, Chords, and Central Angles

If two arcs of a circle are congruent then:

Given:



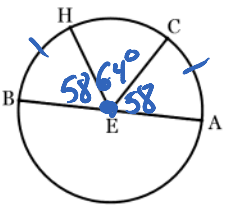
Know:



Therefore: Central $\angle$'s $\cong \Leftrightarrow$ Arcs $\cong \Leftrightarrow$ Chords $\cong$

Examples:

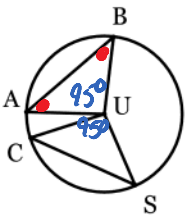
1) Given: $\odot E$, $\overset{\frown}{BH} \cong \overset{\frown}{CA}$, $\angle CEA = 58°$



Find: m$\angle$HEC

64°

2) Given: $\odot U$, $\overline{AB} \cong \overline{CS}$, $\angle CUS = 95°$



Find: m$\angle$UBA

42.5°

3) Find the measure of an arc that is

a) 20% of the circle $\frac{1}{5}(360) = 72°$

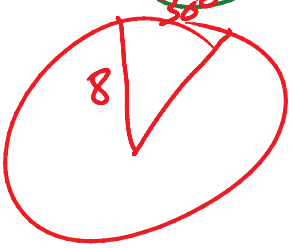
b) $\frac{7}{12}$ of the circle $\frac{7}{12}(360) = 210°$

4) What fractional part of a circle is an arc that measures:

a) 300° $\frac{300}{360} = \frac{5}{6}$

b) 80° $\frac{80}{360} = \frac{2}{9}$

5) A circle with radius 8 mm is given. How long is an arc measuring 30°?

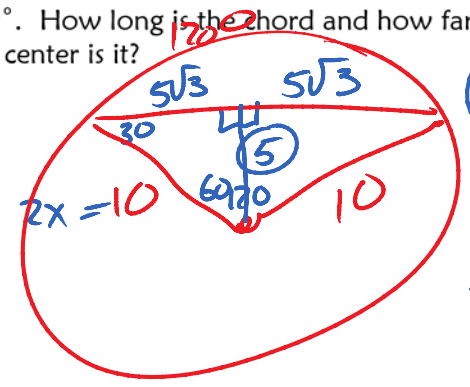


$P = 16\pi$

$\frac{30}{360} = \frac{1}{12}$

$\frac{4\pi}{3}$

6) The chord of a circle of radius 10 cuts of an arc 120°. How long is the chord and how far from the center is it?



$10\sqrt{3}$

$\frac{1}{3}(2\pi)$