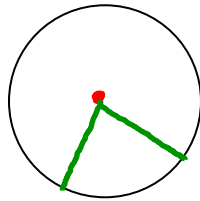


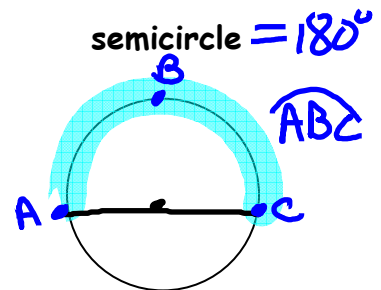
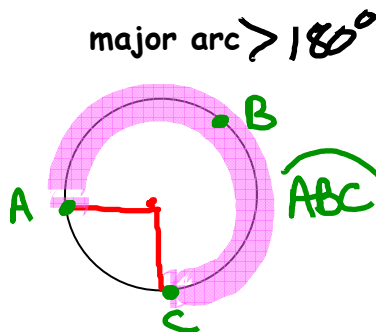
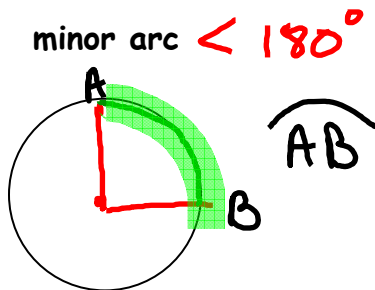
Notes for Lesson 9-3: Arcs and Central Angles

Draw a diagram to go with each of the following definitions below:

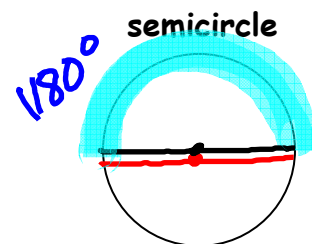
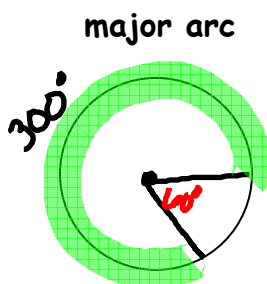
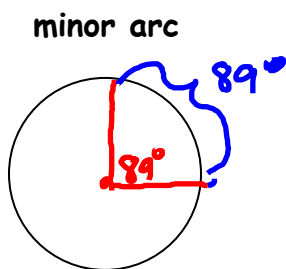
1) Central angle - An angle with its vertex at the center of a circle



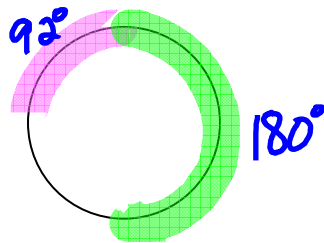
2) Arc - an unbroken part of the circle



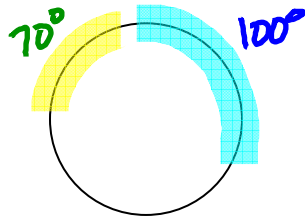
3) Measure of an arc - The measure of a minor arc is the measure of its central angle and is $< 180^\circ$. The measure of a major arc is $360 - (\text{measure of the minor arc})$ and is $> 180^\circ$ but $< 360^\circ$. The measure of a semi circle $= 180^\circ$.



4) Adjacent arcs - arcs with exactly one point in common



5) Arc addition postulate - the measure of the arcs formed by two adjacent arcs is the sum of the measures of these two arcs.



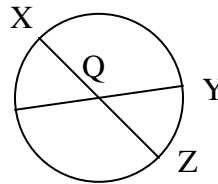
$$100 + 70 = 170^\circ$$

6) Congruent arcs - arcs in the same circle or congruent circles that have equal measures (or the same measure for their central angles).

Name the following:

1) four central angles

$\angle XQW, \angle WQZ, \angle YQZ, \angle XQY$



2) two semi circles

$\widehat{WXZ}, \widehat{XWZ}$

3) four minor arcs

$\widehat{XW}, \widehat{WZ}, \widehat{YZ}, \widehat{ZY}$

4) four major arcs

$\widehat{XWZ}, \widehat{WYZ}, \widehat{YZX}, \widehat{ZWX}$

Find the measure of each arc or angle named.

1) $\angle PCQ$ 60°

2) arc ST 45°

3) arc SQP 180°

4) arc SQ 120°

5) arc SPQ 240°

6) arc SPT 315°

