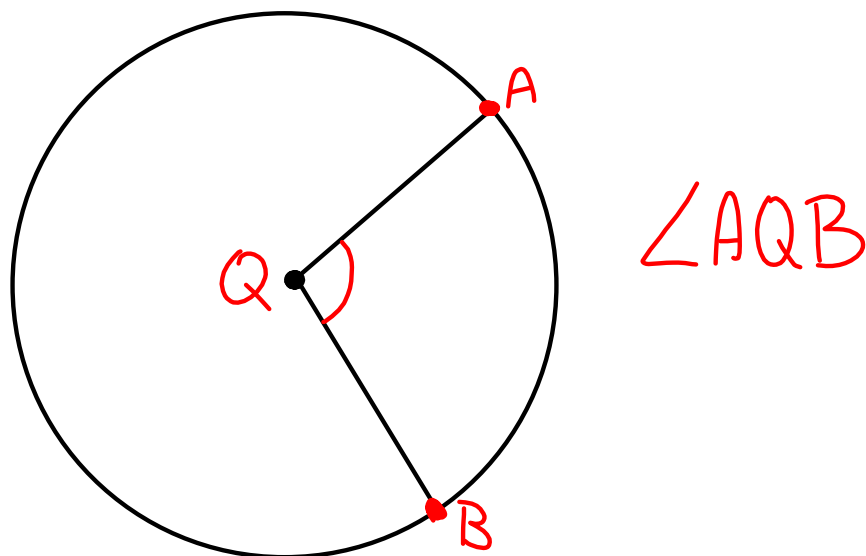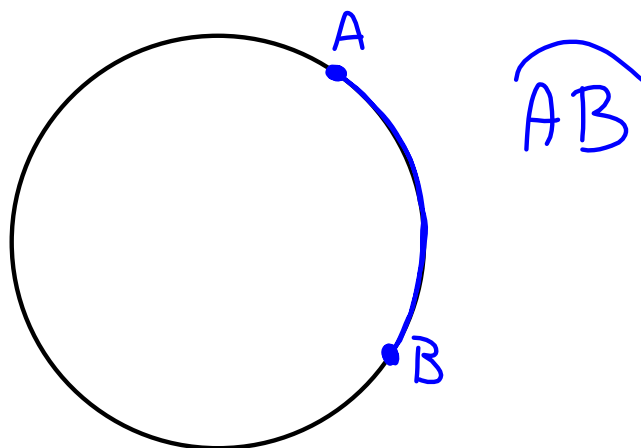# CENTRAL ANGLE

An angle whose vertex is at the center of a circle
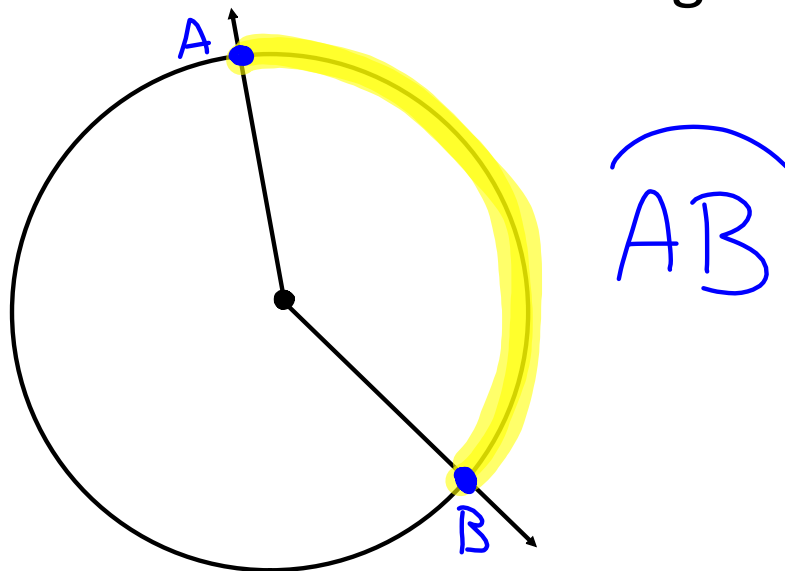

$\angle AQB$

ARC

The part of a circle consisting of 2 points on the circle, and all other points needed to connect them by a single path
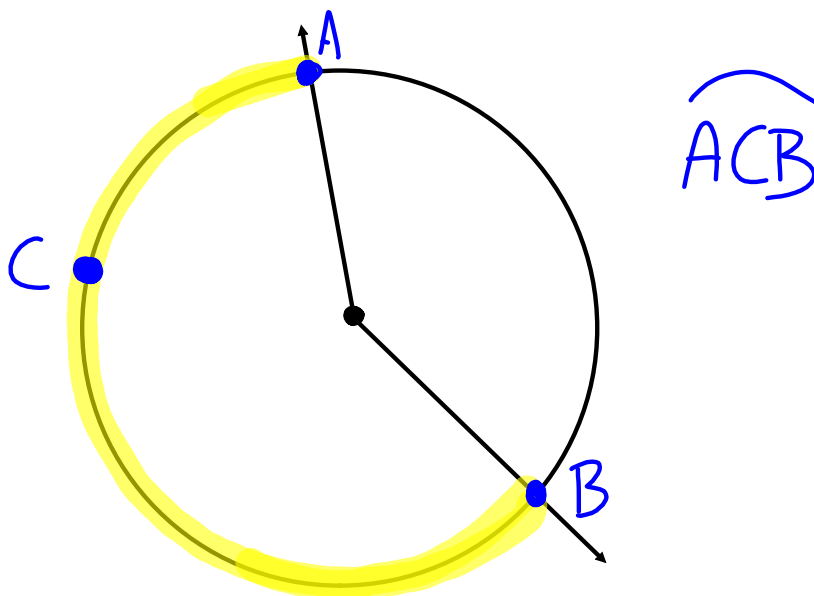

$\overarc{AB}$

MINOR ARC
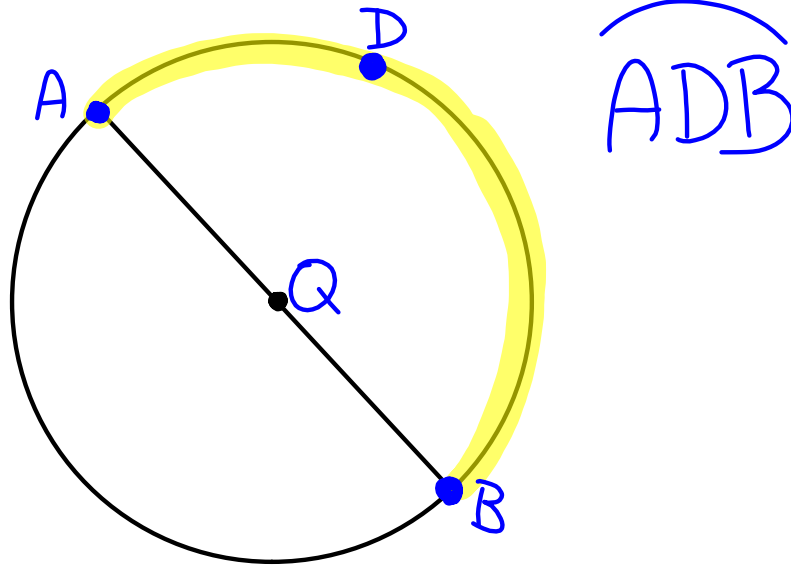An arc whose endpoints are on or inside the sides of a central angle

A

B

$\overarc{AB}$

MAJOR ARC
An arc whose endpoints are on or outside the sides of a central angle

A

C

B

$\overarc{ACB}$

SEMICIRCLE

An arc whose endpoints are the endpoints of a diameter

$\overset{\frown}{ADB}$

MEASURE OF AN ARC
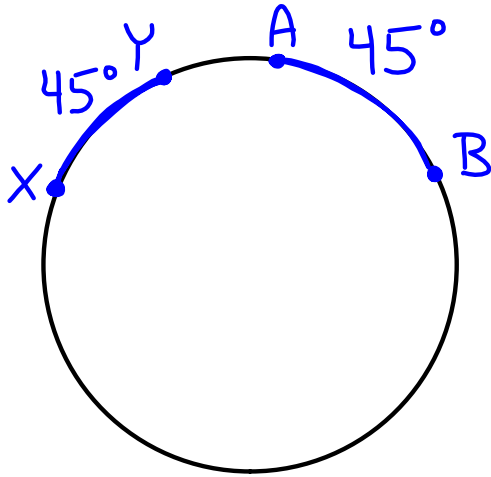
minor arc = the measure of its
                    central angle

major arc = 360 minus the measure
                    of its related minor arc
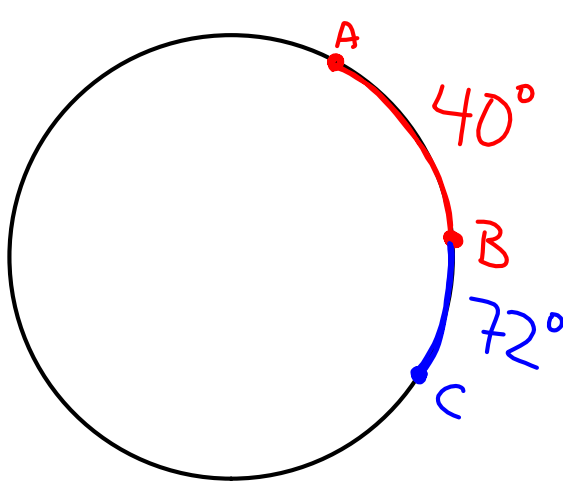
semicircle = 180°

CONGRUENT ARCS

Two arcs that have the same measure and are parts of the same circle or congruent circles.

$$\overset{\frown}{XY} \cong \overset{\frown}{AB}$$

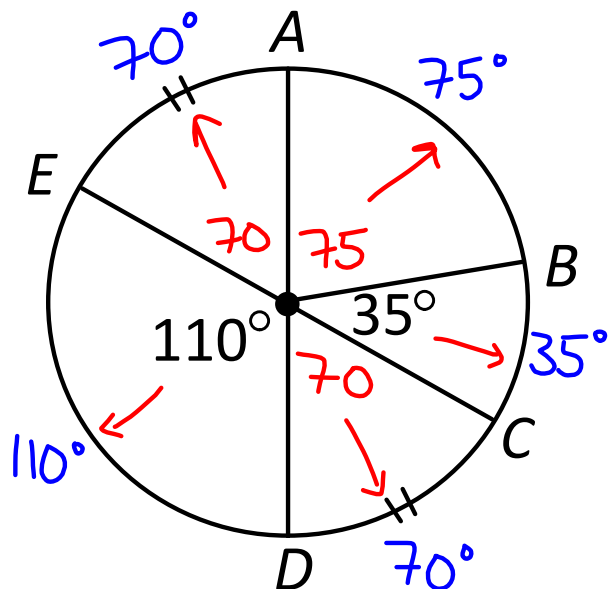## Arc Addition Postulate

The measure of an arc formed by two adjacent arcs is equal to the sum of the measures of the two arcs.

$$m\overset{\frown}{AC}$$
$$= m\overset{\frown}{AB} + m\overset{\frown}{BC}$$
$$= 40 + 72$$
$$= 112°$$

Lesson 3 - Central Angles and Arc Measures Marked

Find the measure of each arc

$\overgroup{AED}$ = 180°

$\overgroup{AC}$ = 110°

$\overgroup{ACE}$ = 290°

$\overgroup{BE}$ = 145°

$\overgroup{CDE}$ = 180°

$\overgroup{AEC}$ = 250°

70° A 75°
E
70 75
B
110° 35° 35°
70
110°
C
D 70°

Two diameters of circle Q are $\overline{AB}$ and $\overline{CD}$. Find the arc measures if the measure of $\overgroup{AD}$ is 27°

153°

A C
27° 27°
Q
D B

153°
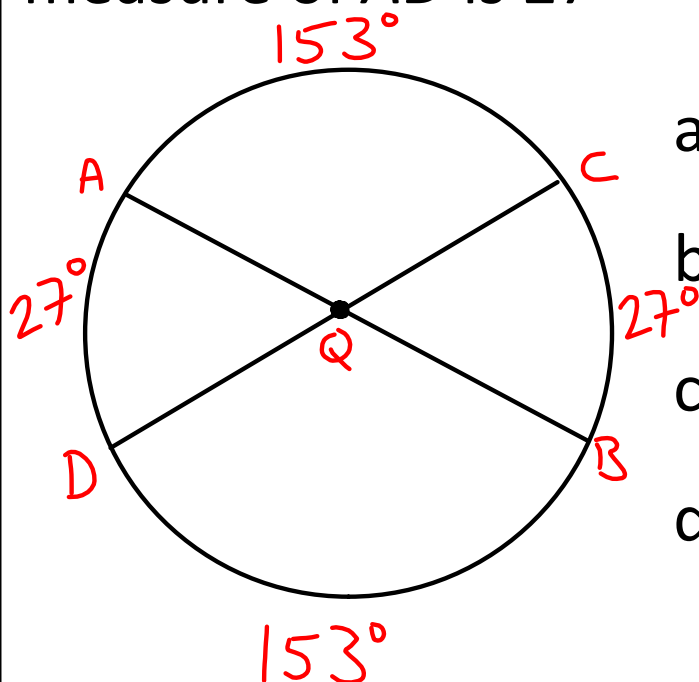
a)   m$\overgroup{AC}$ = 153°

b)   m$\overgroup{BC}$ = 27°

c)   m$\overgroup{CAB}$ = 333°

d)   m$\overgroup{ADC}$ = 207°

Lesson 3 - Central Angles and Arc Measures Marked
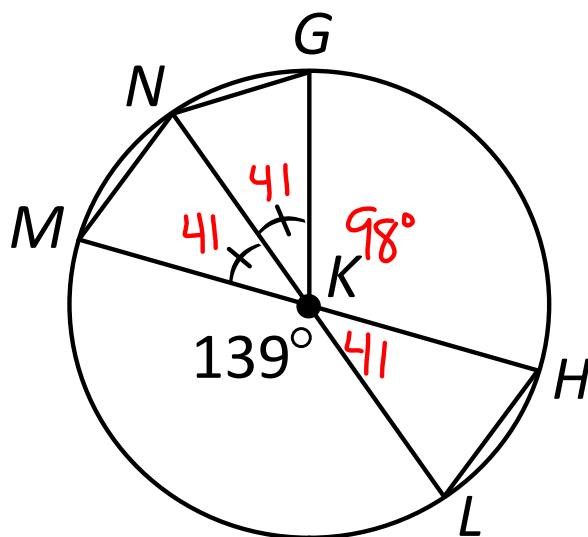
$GN = 3x$

$HL = x + 14$

$\overset{\frown}{GN} \cong \overset{\frown}{HL}$

$3x = x + 14$

$2x = 14$

$x = 7$