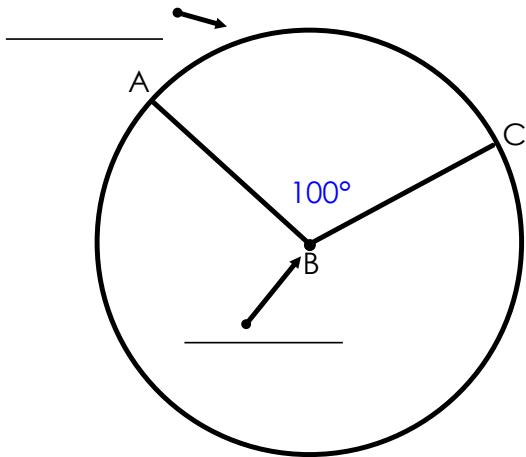# 5.2 Arcs and Central Angles in a Cricle
Objective: Find the measure of angles and arcs in a circle

Central Angles

A central angle is the angle formed by two _____ with its vertex at the center of the circle.
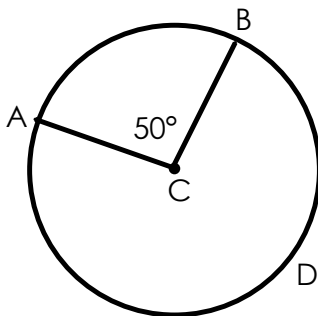
_____

A

100°

B

C

∠ABC = _____ $\overset{\frown}{AC}$ = _____

A central angle is equal to its Intercepted arc

Fun Fact

There are

_____

in a circle

Find the measure of $\overset{\frown}{AB}$ and a $\overset{\frown}{ADB}$

B

A

50°

C

D

$\overset{\frown}{AB}$ = _____ $\overset{\frown}{ADB}$ = _____
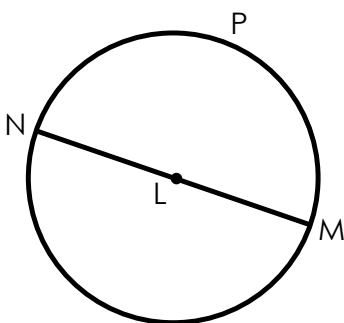
Find the measure of $\overset{\frown}{NPM}$ and ∠NLM

P

N

L

M

∠NLM=_____ $\overset{\frown}{NPM}$=_____

Find the measure of ∠DCB and ∠ACD

∠DCB =_____   ∠ACD = _____

32°

A
C
D
B
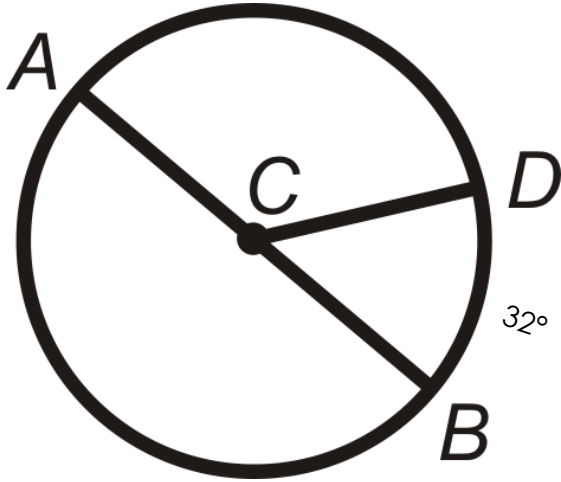
Find the measure of $\overset{\frown}{AD}$ and $\overset{\frown}{AE}$

$\overset{\frown}{AD}$ = ____ $\overset{\frown}{AE}$ = _____
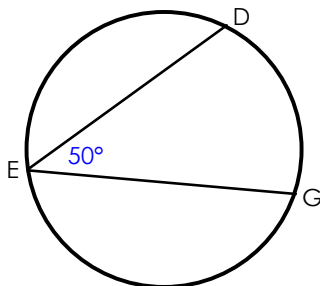
A
C
E
40°
D
B
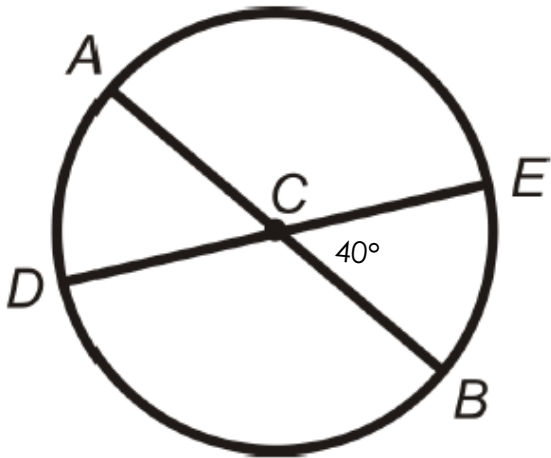
The Inscribed Angle Theorem

Inscribed angles are angles on the CIRCUMFERENCE of the circle

the measure of an intercepted arc is _____ the measure of its inscribed angle

A

Intercepted arc

$\overset{\frown}{AC}$ = ____

Inscribed angle

20°

∠B = _____

B   C
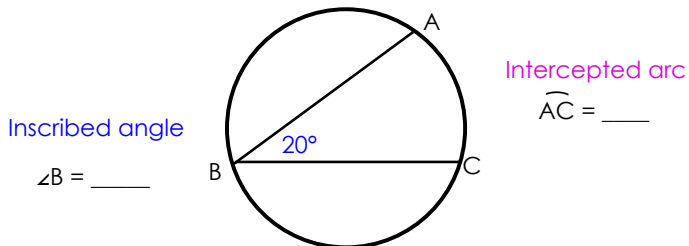
Inscribed Angle Theorem

2 (inscribed angle) = intercepted arc

2(_____) = _____

Find the measure of $\overset{\frown}{DG}$

D

50°

E

G

2 (inscribed angle) = intercepted arc

2(_____) = _____

$\overset{\frown}{DG}$ = _____

2 (inscribed angle) = intercepted arc

Find the measure of ∠B

120°

A

C
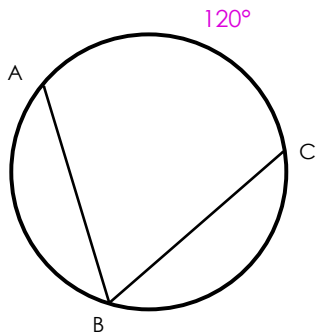
2 (inscribed angle) = intercepted arc

2(_____) = _____

B

∠B=_____

A

C

B
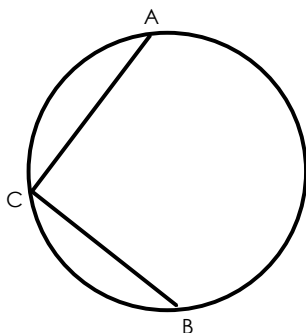
$\overset{\frown}{ACB}$ has a measure of 148° . Find the measure of ∠C

∠C= _____

Independent Practice

Find the measure of $\overarc{AC}$ and $\overarc{ADC}$

A

C

42°

B

D

$\overarc{AC}$ = _____ $\overarc{ADC}$= _____
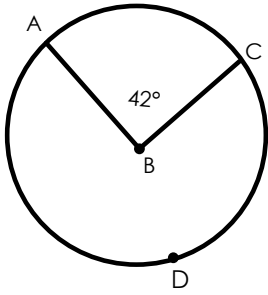
Find the measure of $\overarc{DGF}$

D

G

E

F

$\overarc{DGF}$ = ___
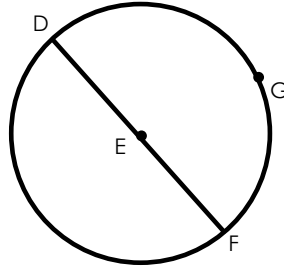
Find the measure of $\overarc{IJ}$

H

108°

I

K

J

$\overarc{AC}$ = _____
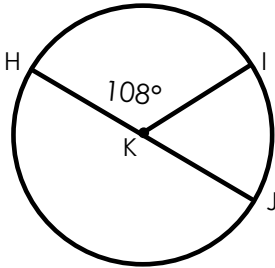
Find the measure of ∠NOM
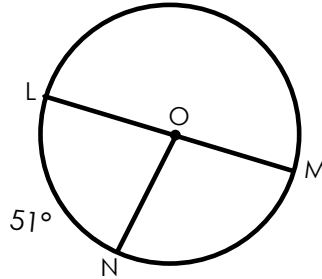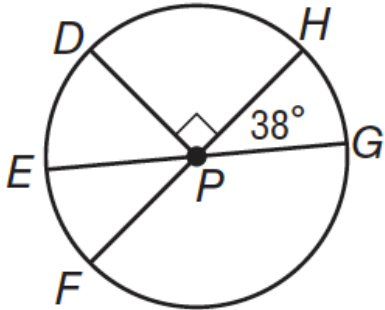
L

O

M

51°

N

∠NOM= _____

Find the measure of the following arcs

D

H

38°

E

G

P

F

$\overarc{EF}$ = _____ $\overarc{ED}$ = _____

Find the measure of the following arcs

E

D

50°

A

Q 100°

C

B

$\overarc{AB}$ = _____ $\overarc{DC}$ = _____ $\overarc{AE}$ = _____
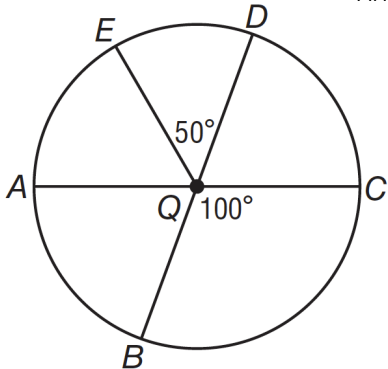
Find the measure of the stated arcs and angles

$m \, \widehat{XY}$

$\widehat{XY}=$_____

$m\angle E$

$\angle E=$____

$m\widehat{AB}$

$\widehat{AB}=$_____

$m\angle X$

$\angle X=$____

$m\angle R$

$\angle R=$____

$m\widehat{MPN}$

$\widehat{MPN}=$_____
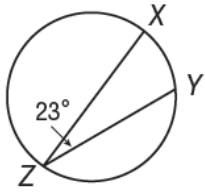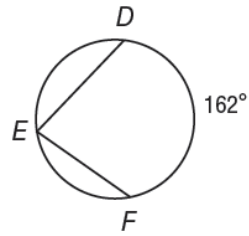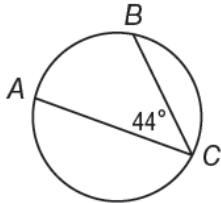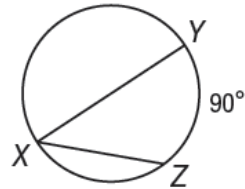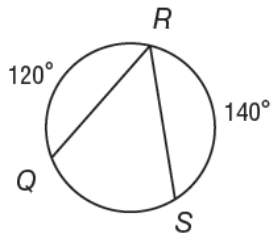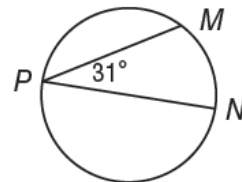
In the accompanying diagram of circle O,
$m\overset{\frown}{ABC} = 150.$
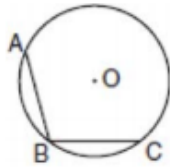
What is m∠ABC?

The NUK Energy Company is designing a new
logo, as shown in the accompanying diagram, with
$m\overset{\frown}{NK} = 130$ and $m\overset{\frown}{NK} = m\overset{\frown}{NU}.$
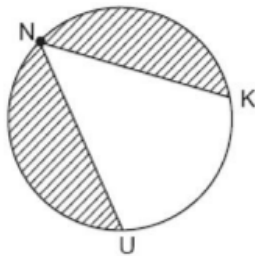
What is the measure of ∠KNU?

In the accompanying diagram of circle O, $\overline{AB}$ and
$\overline{BC}$ are chords and m∠$AOC = 96$. What is
m∠ABC?