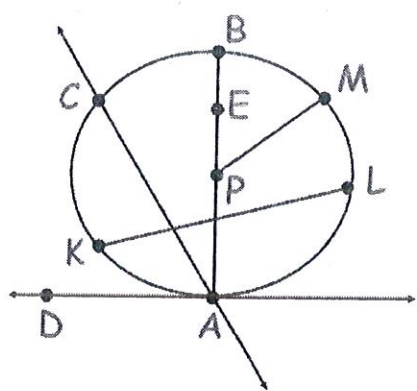


Geometry
Introduction to Circles

Name: Key
Date: _____

Terminology. (List one example of each.)



- Circle ⊙P
- Chord KL
- Radius PM
- Diameter AB
- Tangent ↔ DA
- Secant ↔ CA
- 3 pts Major Arc - more than 180° BAK
- 2 pts Minor Arc - less than 180° BL
- 3 pts Semicircle 180° BMA
- Central Angle ∠MPA

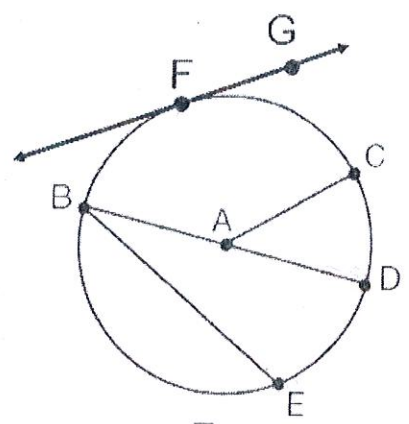
Now Match the Definitions.

- | | | |
|--|----------|------------------|
| 1. the set of all points equidistant from a point | <u>B</u> | a. central angle |
| 2. the distance from a point on a circle to the center | <u>G</u> | b. circle |
| 3. a line segment whose endpoints lie on a circle | <u>C</u> | c. chord |
| 4. a chord that passes through the center of a circle | <u>D</u> | d. diameter |
| 5. a line that intersects a circle at exactly two points | <u>H</u> | e. major arc |
| 6. a line that intersects a circle at exactly one point | <u>J</u> | f. minor arc |
| 7. an angle whose vertex is the center of a circle | <u>A</u> | g. radius |
| 8. an arc whose endpoints lie on the diameter | <u>I</u> | h. secant |
| 9. an arc that is less than a semicircle | <u>F</u> | i. semicircle |
| 10. an arc that is greater than a semicircle | <u>E</u> | j. tangent |

Let's Practice.

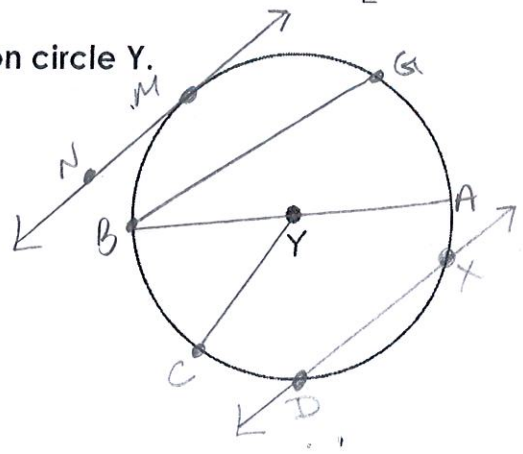
- Name the circle.
- Name a radius.
- Name a diameter.
- Name a chord that is not the diameter.
- Name the central angle.
- Name a minor arc.
- Name a semicircle.
- Name a major arc.
- Name a tangent.

- ⊙A
- AC
- BD
- BE
- ∠CAD
- DE
- BED
- BEC
- FG



Let's Draw. Using a straightedge, draw the following on circle Y.

- a chord BG
- a diameter AB
- a tangent MN
- a radius CY
- a secant DX



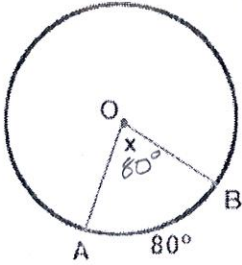
YOU MUST REMEMBER:

- a circle has 360 degrees.
- a semicircle has 180 degrees.

- vertical angles are congruent.
- linear pairs are supplementary.
↳ total 180°

Measures of Central Angles

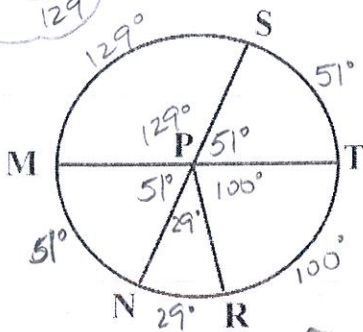
Measure of central angle = measure of intercepted arc



$\angle AOB$ is the central angle.
 \widehat{AB} is the intercepted arc.
 $m\angle AOB = m\widehat{AB} = \underline{80^\circ}$.

Let's Practice.

In $\odot P$, $m\angle SPT = 51^\circ$, $m\angle NPR = 29^\circ$, and \overline{SN} and \overline{MT} are diameters.
 Find each measure.



- $m\widehat{NR} = 29^\circ$
- $m\widehat{ST} = 51^\circ$
- $m\angle MPN = 51^\circ$
- $m\widehat{TSR} = 260^\circ$
- $m\widehat{MN} = 51^\circ$
- $m\widehat{MST} = 180^\circ$
- $m\widehat{NMS} = 180^\circ$
- $m\angle MPS = 129^\circ$
- $m\widehat{SRN} = 180^\circ$
- $m\widehat{NTS} = 180^\circ$
- $m\angle TPR = 100^\circ$
- $m\widehat{RT} = 100^\circ$

Central Angles Classwork

1. Identify and name each of the following from $\odot O$. Be sure to use the correct notation. BD is a diameter.

$\angle BOC$ a. Two different central angles

$\angle DOC$

\widehat{AB} b. A minor arc

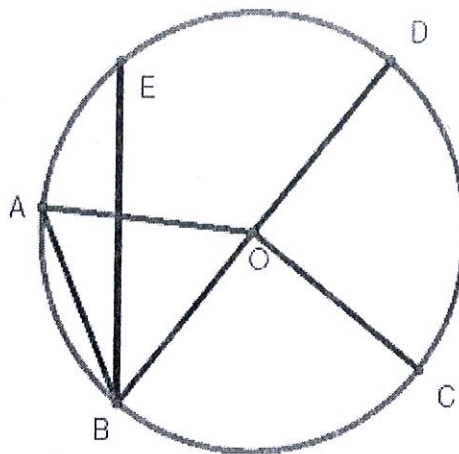
\widehat{DCA} c. A major arc

\widehat{BCD} d. A semicircle

\overline{BE} e. Two different chords

\overline{BA}

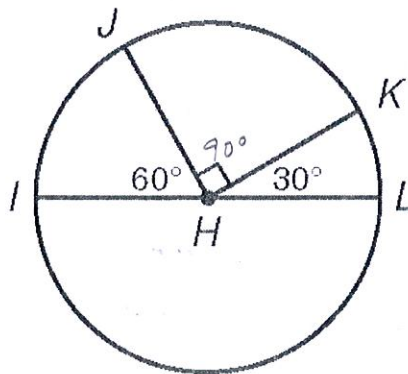
$\angle AOD$ f. The central angle subtended by \widehat{AD}



Find each measure.

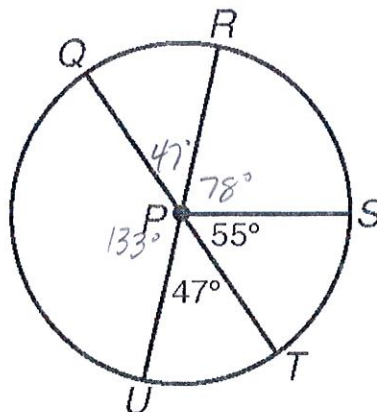
IL is a diameter.

2. $m\widehat{LK}$ 30° , $m\widehat{IK}$ 150°



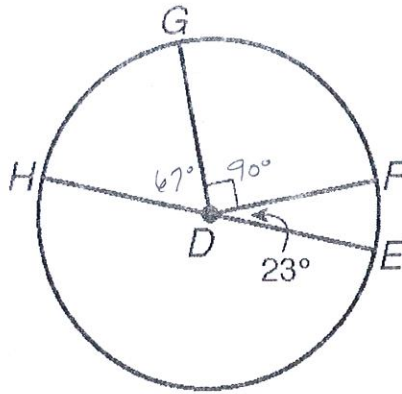
RU & QT are diameters.

3. $m\widehat{QS}$ 125° , $m\widehat{ROT}$ 227°



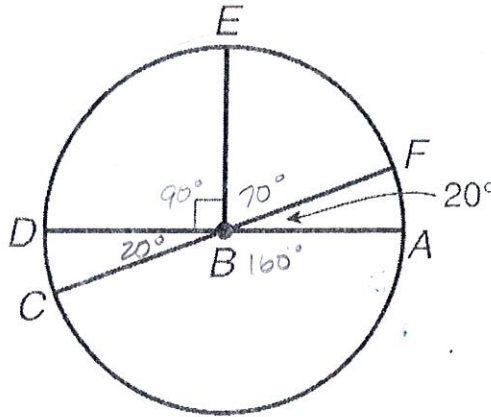
HE is a diameter

4. $m\widehat{HG}$ 67° , $m\widehat{FEH}$ 203°

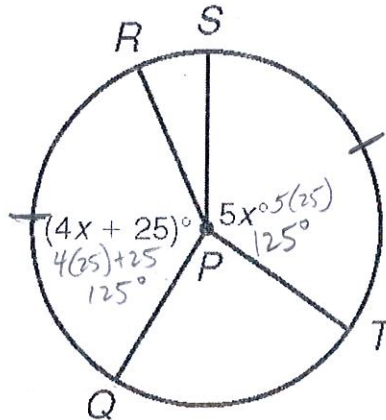


DA and FC are diameters.

5. $m\widehat{EF}$ 70° , $m\widehat{CEA}$ 200°



6. $\angle QPR$ 125°

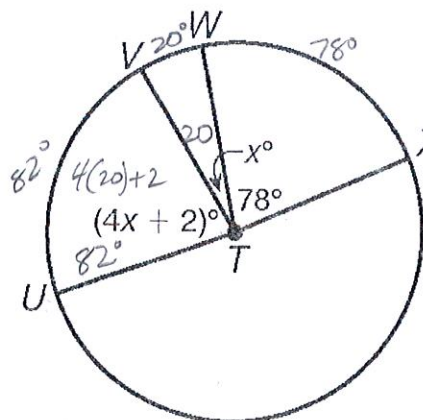


$$5x = 4x + 25$$

$$x = 25$$

UX is a diameter.

7. $\angle UTW$ 102° , $m\widehat{UV}$ 82°



$$4x + 2 + x + 78 = 180$$

$$5x + 80 = 180$$

$$5x = 100$$

$$x = 20$$