Circles and Related Terms

Circle: a set of all points in a plane that are the same distance from a fixed points called the **center**

Radius: a segment whose endpoints are the center of a circle and a point on the circle

Central angle: an angle formed by any two distinct radii of a circle

Arc: a portion of a circle that consists of two endpoints and all the points on the circle between these two endpoints

a. **Semicircle:** an arc whose endpoints are the endpoints of a diameter
b. **Minor arc:** an arc which is less than a semicircle
c. **Major arc:** an arc which is more than a semicircle

The degree measure of a semicircle is 180°.

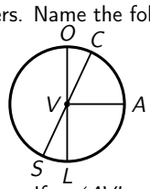
The degree measure of a minor arc is the same as the degree measure ot its corresponding central angle.

The degree measure of a major arc is 360° minus the degree measure of its corresponding minor arc.

Practice Exercises

A. In $\odot V$, $\overline{OL}$ and $\overline{CS}$ are diameters. Name the following.

1. Radius
2. Central angle
3. Semicircle
4. Minor arc
5. Major arc



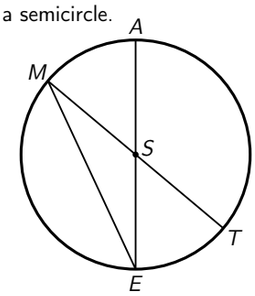
B. In $\odot V$, $\overline{OL}$ and $\overline{CS}$ are diameters. If $m\angle AVL = 90^\circ$ and $m\angle SVL = 40^\circ$, find:

1. $m\widehat{OC}$
2. $m\widehat{AL}$
3. $m\widehat{LS}$
4. $m\angle CVA$
5. $m\widehat{CA}$
6. $m\angle OVS$
7. $m\widehat{OS}$
8. $m\widehat{CAS}$
9. $m\angle AVS$

Problem Set

A. In $\odot S$, $\overline{AE}$ and $\overline{MT}$ are diameters. Determine whether each arc is a minor arc, a major arc, or a semicircle.

1. $m\widehat{MA}$
2. $m\widehat{AT}$
3. $m\widehat{ME}$
4. $m\widehat{MET}$
5. $m\widehat{ET}$
6. $m\widehat{ETA}$
7. $m\widehat{MAE}$
8. $m\widehat{ATM}$



B. In $\odot S$, $\overline{AE}$ and $\overline{MT}$ are diameters and $m\angle MSA = 30^\circ$. Find each measure.

1. $m\widehat{MA}$
2. $m\widehat{AT}$
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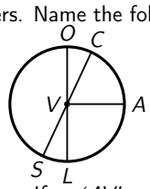

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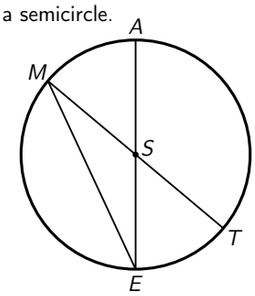

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