

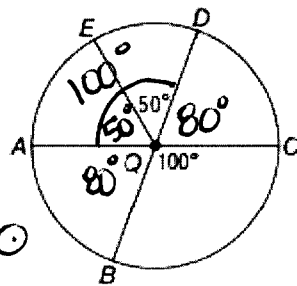
10-2 Angles and Arcs

Master E

Terminology	Definition	Diagram/Examples
Central Angle	<ul style="list-style-type: none"> an angle with a vertex in the <u>center</u> of the circle. Its sides contain two <u>radii</u> of the circle. The sum of the measures of the central angles of a circle with no interior points in common is <u>360</u>°. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $m\angle RMS + m\angle SMT + m\angle TMV + m\angle VMR = \underline{360}$ </div>	
Minor Arc	<ul style="list-style-type: none"> the shortest arc connecting two endpoints on a circle. The measure of a minor arc is less than <u>180</u>° and equal to the measure of its related <u>central</u> angle. (EX: <u>RS</u>, <u>ST</u>, and <u>TV</u>) 	
Major Arc	<ul style="list-style-type: none"> the longest arc connecting two endpoints on a circle. The measure of a major arc is greater than <u>180</u>°, and equal to 360 minus the measure of the <u>minor</u> arc with the same endpoints. (EX: <u>RST</u>, <u>STR</u>, and <u>VST</u>) 	
Semicircle	<ul style="list-style-type: none"> an arc with endpoints that lie on a diameter. The measure of a semicircle is <u>180</u>°. (EX: <u>STV</u> and <u>VRS</u>) 	
Congruent Arcs	<ul style="list-style-type: none"> arcs in the <u>same</u> or <u>≅</u> circles that have the same measure. In the same circle or <u>≅</u> circles, two minor arcs are congruent if and only if their <u>central</u> angles are congruent. 	<p>If $\angle RMV \cong \angle VMT$, then $\widehat{RV} \cong \widehat{VT}$</p> <p>If $\widehat{RV} \cong \widehat{VT}$, then $\angle RMV \cong \angle VMT$</p>
Adjacent Arcs	<ul style="list-style-type: none"> arcs in a circle that have <u>only 1</u> point in common. $\widehat{RS} \cong \widehat{ST}$ $\widehat{TV} \cong \widehat{VR}$	
Arc Addition Postulate	<ul style="list-style-type: none"> It's just like the <u>seg.</u> & <u>≠</u> addition postulates! The measure of an arc formed by 2 <u>adjacent</u> arcs is the <u>SUM</u> of the measures of the 2 arcs. <p>(EX: $m\widehat{RV} + m\widehat{VT} = m\widehat{RT}$; $m\widehat{ST} + m\widehat{TV} = m\widehat{STV}$; $m\widehat{STV} + m\widehat{VR} = m\widehat{STR}$)</p>	

10-2 Angles & Arcs Skills Practice

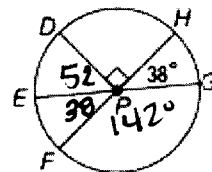
\overline{AC} and \overline{EB} are diameters of $\odot Q$. Identify each arc as a major arc, minor arc, or semicircle of the circle. Then find its measure.



1. $m\widehat{AE} = 50^\circ$ minor \frown
3. $m\widehat{EDC} = 130^\circ$ ~~major~~ \smile **minor \frown !**
5. $m\widehat{ABC} = 180^\circ$ semi \circ

2. $m\widehat{AB} = 80^\circ$ minor \frown
4. $m\widehat{ADC} = 180^\circ$ semi \circ
6. $m\widehat{BC} = 100^\circ$ minor \frown

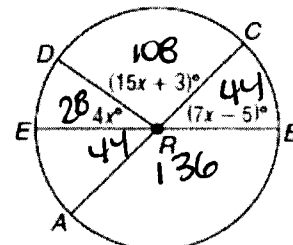
\overline{FH} and \overline{EG} are diameters of $\odot P$. Find each measure.



7. $m\widehat{EF} = 38^\circ$
9. $m\widehat{FG} = 142^\circ$
11. $m\widehat{DFG} = 232^\circ$ ($52 + 38 + 142$)

8. $m\widehat{DE} = 52^\circ$
10. $m\widehat{DHG} = 178^\circ$ ($90 + 38$)
12. $m\widehat{DGE} = 308^\circ$ ($360 - 52$)

ALGEBRA In $\odot R$, \overline{AC} and \overline{EB} are diameters. Find each measure.



1. $m\angle ERD = 28^\circ$
3. $m\angle BRC = 44^\circ$
5. $m\angle ARE = 44^\circ$

2. $m\angle CRD = 108^\circ$
4. $m\angle ARB = 136^\circ$
6. $m\angle BRD = 152^\circ$

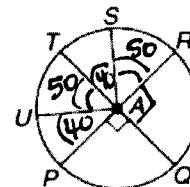
$$4x + 15x + 3 + 7x - 5 = 180$$

$$26x - 2 = 180$$

$$26x = 182$$

$$x = 7$$

In $\odot A$, $m\angle PAU = 40$, $\angle PAU \cong \angle SAT$, and $\angle RAS \cong \angle TAU$. Find each measure.



7. $m\widehat{PQ} = 90^\circ$
9. $m\widehat{ST} = 40^\circ$
11. $m\widehat{RSU} = 140^\circ$ ($50 + 40 + 50$)
13. $m\widehat{PQS} = 230^\circ$ ($180 + 50$)

8. $m\widehat{PQR} = 180^\circ$
10. $m\widehat{RS} = 50^\circ$
12. $m\widehat{STP} = 130^\circ$ ($40 + 50 + 40$)
14. $m\widehat{PRU} = 320^\circ$ ($360 - 40$)