

Key

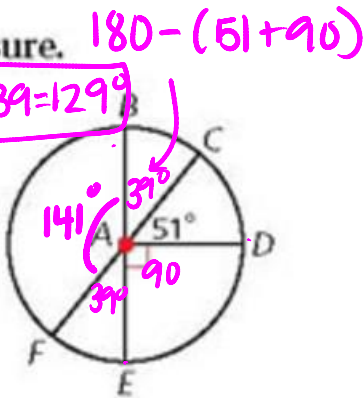
**Vocabulary** Apply the vocabulary from this lesson to answer each question.

- An arc that joins the endpoints of a diameter is called a \_\_\_\_? \_\_\_\_\_. (semicircle or major arc) **Semicircle**
- How do you recognize a *central angle* of a circle? **The vertex is the center of  $\odot$**
- In  $\odot P$   $m\widehat{ABC} = 205^\circ$ . Therefore  $\widehat{ABC}$  is a \_\_\_\_? \_\_\_\_\_. (**major arc** or minor arc)
- In a circle, an arc that is less than a semicircle is a \_\_\_\_? \_\_\_\_\_. (major arc or **minor arc**)

Find each measure.

11.  $m\widehat{DF} = 90 + 39 = 129$

12.  $m\widehat{DEB}$



$m\widehat{FB} = 180 - 39 = 141$

$m\widehat{DEB} = 90 + 39 + 141$

$m\widehat{DEB} = 270^\circ$

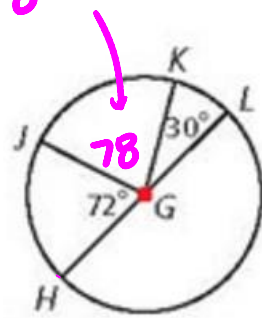
$m\widehat{JL} = 30 + 78 = 108$

13.  $m\widehat{JL} = 108^\circ$

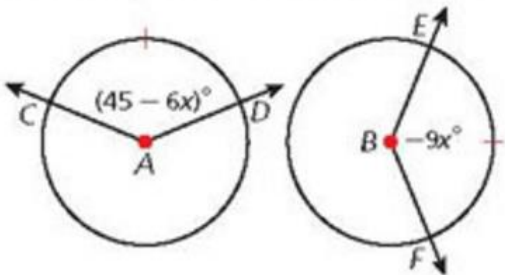
14.  $m\widehat{HLK}$

$m\widehat{HLK} = 180 + 30$

$m\widehat{HLK} = 210^\circ$



16.  $\odot A \cong \odot B$ , and  $\widehat{CD} \cong \widehat{EF}$ . Find  $m\angle EBF$ .



$\triangle CAD \cong \triangle EBF$

$45 - 6x = -9x$

$45 = -3x$

$x = -15$

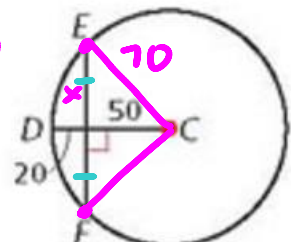
$m\angle EBF = -9(-15)$

$m\angle EBF = 135^\circ$

**Multi-Step** Find each length to the nearest tenth.

18. EF

Radius = 70



$a^2 + b^2 = c^2$

$50^2 + x^2 = 70^2$

$2500 + x^2 = 4900$

$x^2 = 2400$

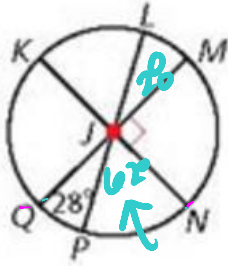
$x \approx \pm 48.99$

$EF = 2(48.99)$

$EF \approx 98.0$

Find each measure.

25.  $m\widehat{MP}$   
 26.  $m\widehat{QNL}$

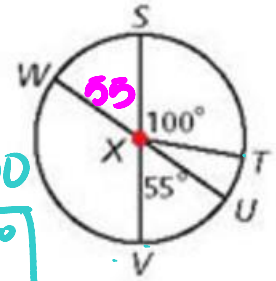


25)  $m\widehat{MP} = 62 + 90$   
 $m\widehat{MP} = 152^\circ$

$180 - (90 + 28)$

26)  $m\widehat{QNL} = 180 + 28$   
 $m\widehat{QNL} = 208^\circ$

27.  $m\widehat{WT}$   
 28.  $m\widehat{WTV}$

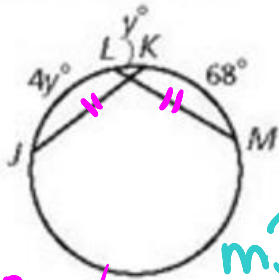


27)  $m\widehat{WT} = 55 + 100$   
 $m\widehat{WT} = 155^\circ$

28)  $m\widehat{WTV} = 55 + 180$   
 $m\widehat{WTV} = 235^\circ$

30.  $\overline{JK} \cong \overline{LM}$ . Find  $m\widehat{JK}$ .

$\widehat{JK} \cong \widehat{LM}$

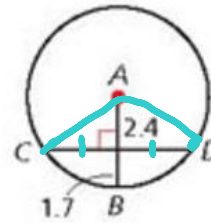


$4y + y = 68 + y$   
 $4y = 68$   
 $y = 17$

$m\widehat{JK} = 4y + y$   
 $= 5y$   
 $= 5(17)$   
 $m\widehat{JK} = 85^\circ$

**Multi-Step** Find each length to the nearest tenth.

31.  $CD$



Radius = 4.1



$a^2 + b^2 = c^2$   
 $x^2 + (2.4)^2 = (4.1)^2$   
 $x^2 = 11.05$   
 $x \approx 3.32$

$CD = 2(3.32)$   
 $CD \approx 6.6$

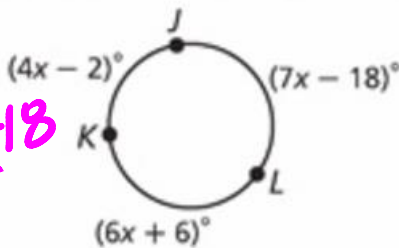
Determine whether each statement is true or false. If false, explain why.

33. The central angle of a minor arc is an acute angle.

False. A minor arc is always less than  $180^\circ$  so the central  $\angle$  should be obtuse.

**Algebra** Find the indicated measure.

38.  $m\widehat{JL}$



$m\widehat{JL} = 7(22) - 18$   
 $m\widehat{JL} = 136^\circ$

$4x - 2 + 7x - 18 + 6x + 6 = 360$   
 $17x - 14 = 360$   
 $17x = 374$   
 $x = 22$