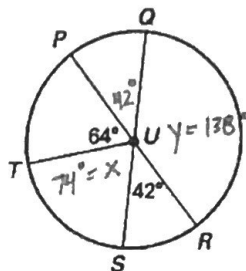In ⊙F, determine whether the given arc is a *minor arc*, *major arc*, or *semicircle*.

1. $\overarc{AB}$ minor        2. $\overarc{AE}$ Minor

3. $\overarc{EAC}$ Semicircle   4. $\overarc{ACD}$ Major

5. $\overarc{CAD}$ Major        6. $\overarc{DEB}$ Semicircle

7. $\overarc{BAE}$ Minor        8. $\overarc{DEC}$ Major
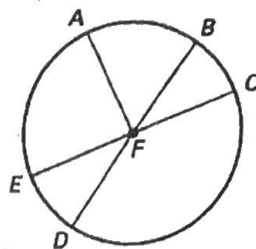
In the figure, $\overline{PR}$ and $\overline{QS}$ are diameters of ⊙U. Find the measure of the indicated arc.

9. $m\overarc{PQ}$ 42°         10. $m\overarc{ST}$ 74°

11. $m\overarc{TPS}$ 286°      12. $m\overarc{RT}$ 116°

13. $m\overarc{RQS}$ 318°      14. $m\overarc{QR}$ 138°

15. $m\overarc{PQS}$ 222°      16. $m\overarc{TQR}$ 244°

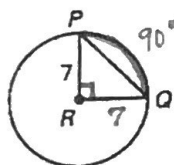17. $m\overarc{PS}$ 138°       18. $m\overarc{PTR}$ 180°

$x = 180 - 64 - 42$
$x = 74$
$y = 180 - 42$
$y = 138$

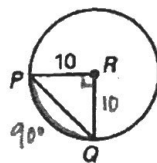$\overarc{PQ}$ has a measure of 90° in ⊙R. Find the length of $\overline{PQ}$.

19.
$7^2 + 7^2 = PQ^2$
$98 = PQ^2$
$\sqrt{98} = PQ$
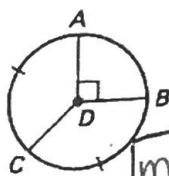$\boxed{9.9 \approx PQ}$

20.
$10^2 + 10^2 = PQ^2$
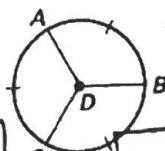$200 = PQ^2$
$\sqrt{200} = PQ$
$\boxed{14.14 \approx PQ}$

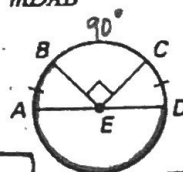Find the indicated arc measure.

21. $m\overarc{AC}$           2. $m\overarc{ACB}$          23. $m\overarc{DAB}$

$\boxed{m\overarc{AC} = 135°}$   $\boxed{m\overarc{ACB} = 240°}$   $\boxed{m\overarc{DAB} = 225°}$

Two diameters of ⊙T are $\overline{PQ}$ and $\overline{RS}$. Find the given arc measure if $m\overarc{PR} = 35°$.

24. $m\overarc{PS}$           25. $m\overarc{PSR}$          26. $m\overarc{PRQ}$          27. $m\overarc{PRS}$

145°                         325°                         180°                         215°
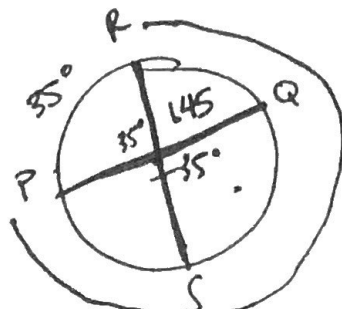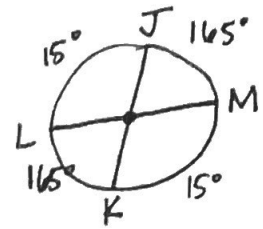
Two diameters of ⊙N are $\overline{JK}$ and $\overline{LM}$. Find the given arc measure if $m\widehat{JM} = 165°$.


15°  J  165°
L          M
16°      15°
K

**28.** $m\widehat{JL}$,   **29.** $m\widehat{JMK}$   **30.** $m\widehat{JLM}$   **31.** $m\widehat{KLM}$
15°              180°              195°              345°

**Tell whether the given arcs are congruent.**

**✳32.** $\widehat{JK}$ and $\widehat{QR}$   Not congruent!   **33.** $\widehat{AB}$ and $\widehat{CD}$


J  K
105°
4
M

P
4.5  Q
105°
R

C  D
96°
B  42°  180°
A
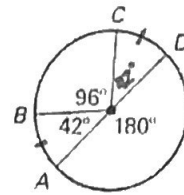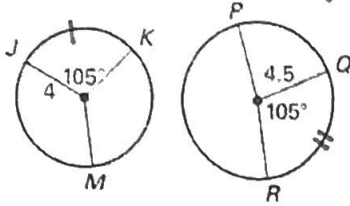
**✳34.** $\widehat{EF}$ and $\widehat{GH}$   Not enough info.!   **35.** $\widehat{STV}$ and $\widehat{UVT}$

120°   150°


E  F
75°

G
75°
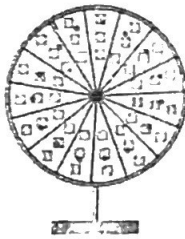H

T
S      V
30°  0°
U
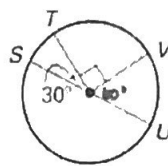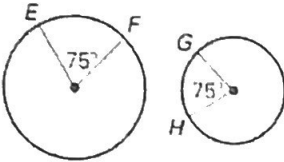
Not congruent!

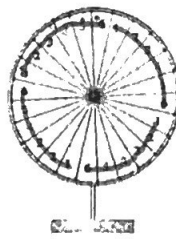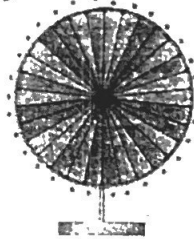**Game Shows** Each game show wheel shown is divided into congruent sections. Find the measure of each arc.

12°

**36.**                          **37.**                          **38.**



$\frac{360}{15} = 24°$      $\frac{360}{24} = 15°$      $\frac{360}{30} = 12°$

**In Exercises 39 and 40, use the following information.**

Sprinkler A water sprinkler covers the shaded area shown in the figure. It moves through the covered area at a rate of about 5° per second.

**39.** What is the measure of the arc covered by the sprinkler? 170°

**40.** If the sprinkler starts at the far left position, how long will it take for the sprinkler to reach the far right position?

$\frac{170°}{5°} = 34$ seconds
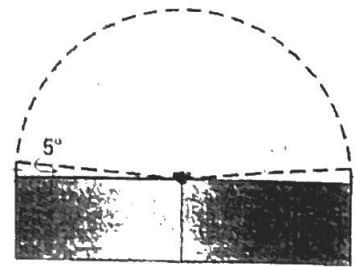

5°
← assuming this is a straight angle (180°)