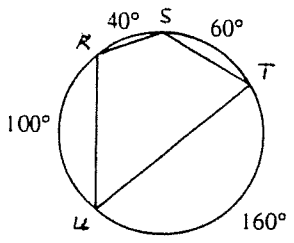
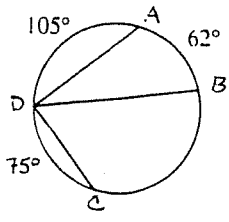


KEY

Geometry (H)  
Section - Inscribed Angles  
Homework

- ① 31    ② 118    ③ 59    ④ 180  
⑤ 110    ⑥ 130  
⑦ 70    ⑧ 50

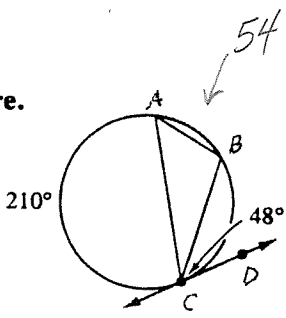


Find each measure.

1.  $m\angle ADB$     2.  $m\widehat{BC}$     3.  $m\angle BDC$     4.  $m\widehat{AC}$   
5.  $m\angle R$     6.  $m\angle S$     7.  $m\angle T$     8.  $m\angle U$

$\overline{CD}$  is tangent at C. Find each measure.

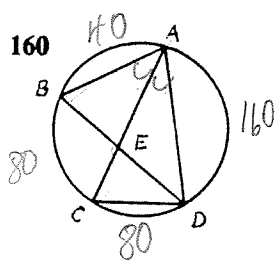
9.  $m\angle CAB$  48  
10.  $m\angle ABC$  105  
11.  $m\angle ACB$  27



$m\angle C = 96$

$\overline{AC}$  bisects  $\angle BAD$ .  $m\widehat{CD} = 80$ ,  $m\widehat{AD} = 160$   
Find each measure.

12.  $m\angle BAC$     13.  $m\angle BDC$   
14.  $m\angle AEB$     15.  $m\angle ADB$



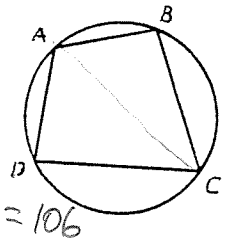
- ⑫ 40    ⑬ 40  
⑭ 60    ⑮ 20

17.

Suppose that  $ABCD$  is a quadrilateral inscribed in a circle and that  $\overline{AC}$  is a diameter of the circle. If  $m\angle A$  is three times  $m\angle C$ , what are the measures of all four angles?

18. If  $m\angle A = 4x + 35$ ,  $m\angle B = 3x + 35$ , and  $m\angle D = 7x + 15$ , find the measure of all four angles of quadrilateral  $ABCD$ .

$3x + 35 + 7x + 15 = 180$      $m\angle A = 87$   
 $10x = 130$      $m\angle B = 74$   
 $x = 13$      $m\angle C = 93$



$m\angle D = 106$

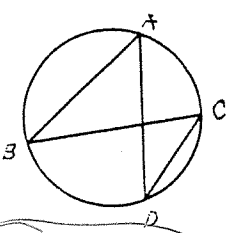
⑰ let  $x = m\angle C$   
 $3x = m\angle A$   
 $3x + x = 180$   
 $x = 45$   
 $m\angle A = 135$   
 $m\angle B = 90$   
 $m\angle C = 45$   
 $m\angle D = 90$

19. If  $m\angle ABC = 3x + 5$  and  $m\angle ADC = 5x - 21$ , find the measure of these two angles.

20. If  $m\angle BAD = 3x + 50$ ,  $m\angle ABC = 4x + 25$ , and  $m\angle BCD = 7x + 30$ , find  $m\angle ADC$ .

⑱  $3x + 5 = 5x - 21$      $m\angle ABC = 44$   
 $x = 13$      $m\angle ADC = 44$

⑳  $3x + 50 = 7x + 30$   
 $20 = 4x$   
 $5 = x$



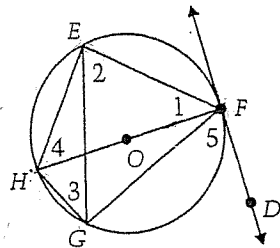
$m\angle ADC = 45$

$m\angle BAD = 65$   
 $m\angle ABC = 45$   
 $m\angle BCD = 65$

Geometry (H)  
Section - Inscribed Angles

1.  $\overline{HF}$  is a diameter of  $\odot O$  and  $DF$  is tangent to  $\odot O$  at  $F$ .

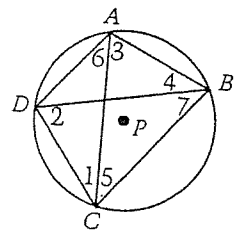
- a. If  $m\widehat{EH} = 65$ , then  $m\angle 1 = \frac{65}{2} = 32\frac{1}{2}$ .
- b. If  $m\angle 4 = 45$ , then  $m\widehat{EF} = 90$ .
- c. If  $m\widehat{HG} = 44$ , then  $m\angle 2 = 68$ .  $180 - 44 = \frac{136}{2}$
- d. If  $m\widehat{EF} = 124$ , then  $m\angle 3 = 28$ .  $180 - 124 = \frac{56}{2}$
- e.  $m\angle HEF = 90$
- f.  $m\angle EFG + m\angle GHE = 180$
- g. If  $m\widehat{FG} = 140$ , then  $m\angle 5 = 70$ .



EG GF

2. ABCD is inscribed in  $\odot P$ .

- a. If  $m\angle DAB = 95$  then  $m\angle DCB = 85$ .
- b. If  $m\angle ADC = 70$  and  $m\angle 7 = 75$ , then  $m\angle 4 = 35$ .  
 $150 + 140 = 290$     $360 - 290 = 70$
- c. If  $m\angle DAB = 110$  and  $m\angle 2 = 35$ , then  $m\angle 6 = 75$ .  
 $220 - 70 = 150$



3. Quadrilateral QRST is inscribed in  $\odot P$ .

$m\angle QTS = x^2 + 2x + 115$  and  $m\angle QRS = 3x + 71$ . Find  $m\angle QTS$ .

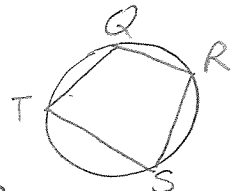
$$x^2 + 2x + 115 + 3x + 71 = 180$$

$$x^2 + 5x + 6 = 0$$

$$(x + 3)(x + 2) = 0$$

$$x = -3 \quad x = -2$$

$m\angle QTS = 118$  or  $115$



4. Prove that a trapezoid inscribed in a circle is an isosceles trapezoid.

Given: Trap ABCD inscribed in  $\odot O$ .

① Trap ABCD inscribed  $\odot O \rightarrow$  ②  $\overline{AB} \parallel \overline{DC} \rightarrow$  ③  $\widehat{AD} \cong \widehat{BC} \rightarrow$  ④  $\overline{AD} \cong \overline{BC} \rightarrow$  ⑤ Trap ABCD is isosceles.

① Given

② In a trap, there are 2 parallel sides.

③ If lines in a circle intercept  $\cong$  arcs.

④ In same  $\odot$ ,  $\cong$  arcs have  $\cong$  chords.

⑤ def. of isos. trap  
If 2 nonparallel sides  $\cong$ , then trap is isos.

