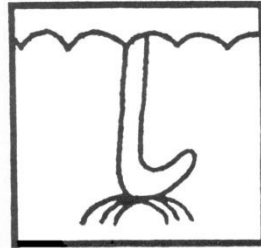


# A Turvy for Measuring Angles in Circles

Answer Key by David Pleacher



A Turvy is a Drawing which has a caption right side up and has another caption if you turn it topsy-turvy.

Caption for the picture:

" A            S P I D E R            H O L D I N G            A N  
 $\overline{8}$              $\overline{23}$   $\overline{12}$   $\overline{7}$   $\overline{10}$   $\overline{6}$   $\overline{21}$              $\overline{1}$   $\overline{24}$   $\overline{13}$   $\overline{10}$   $\overline{7}$   $\overline{22}$   $\overline{3}$              $\overline{8}$   $\overline{19}$

U M B R E L L A."

$\overline{11}$   $\overline{15}$   $\overline{4}$   $\overline{21}$   $\overline{6}$   $\overline{13}$   $\overline{13}$   $\overline{8}$

Caption for the picture turned upside down:

" T H E            L O C H N E S S            M O N S T E R  
 $\overline{17}$   $\overline{1}$   $\overline{6}$              $\overline{13}$   $\overline{24}$   $\overline{2}$   $\overline{1}$   $\overline{20}$   $\overline{6}$   $\overline{23}$   $\overline{23}$              $\overline{18}$   $\overline{24}$   $\overline{19}$   $\overline{23}$   $\overline{17}$   $\overline{6}$   $\overline{21}$

S P O R T I N G            A            T O U P E E."

$\overline{23}$   $\overline{12}$   $\overline{24}$   $\overline{21}$   $\overline{17}$   $\overline{7}$   $\overline{20}$   $\overline{3}$              $\overline{8}$              $\overline{17}$   $\overline{24}$   $\overline{11}$   $\overline{12}$   $\overline{6}$   $\overline{6}$

In Diagram 1 at the right:

$\overline{AD}$  is a diameter.  $\overline{OF}$  is a radius

$\overline{AT}$  is a tangent.

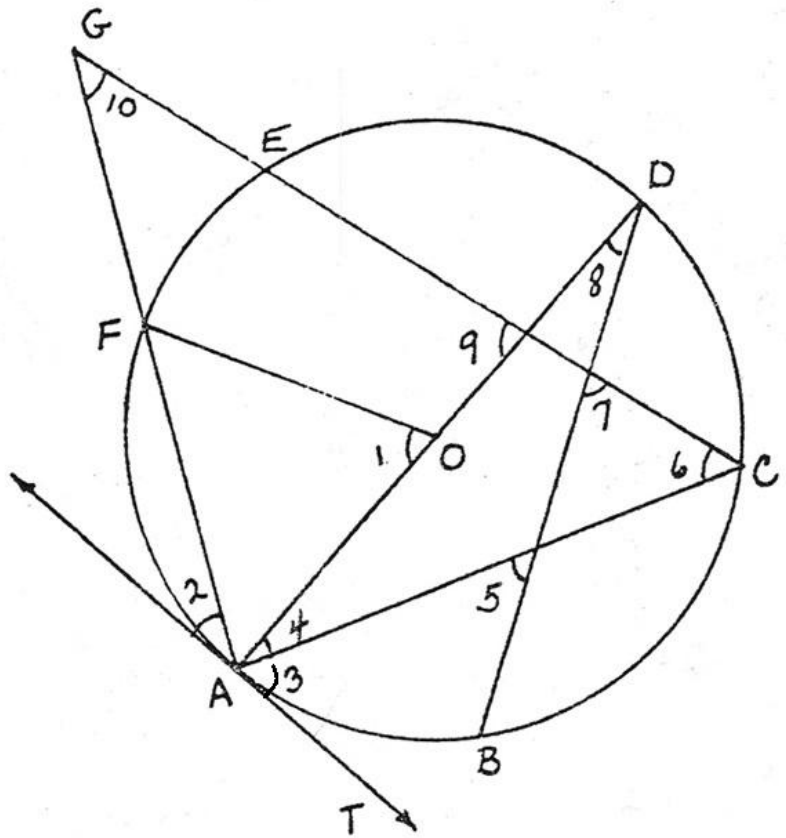
$$m(\text{arc } FE) = 30^\circ,$$

$$m(\text{arc } AB) = 50^\circ,$$

$$m(\text{arc } BC) = m(\text{arc } FA) = 70^\circ,$$

Find these angle measures:

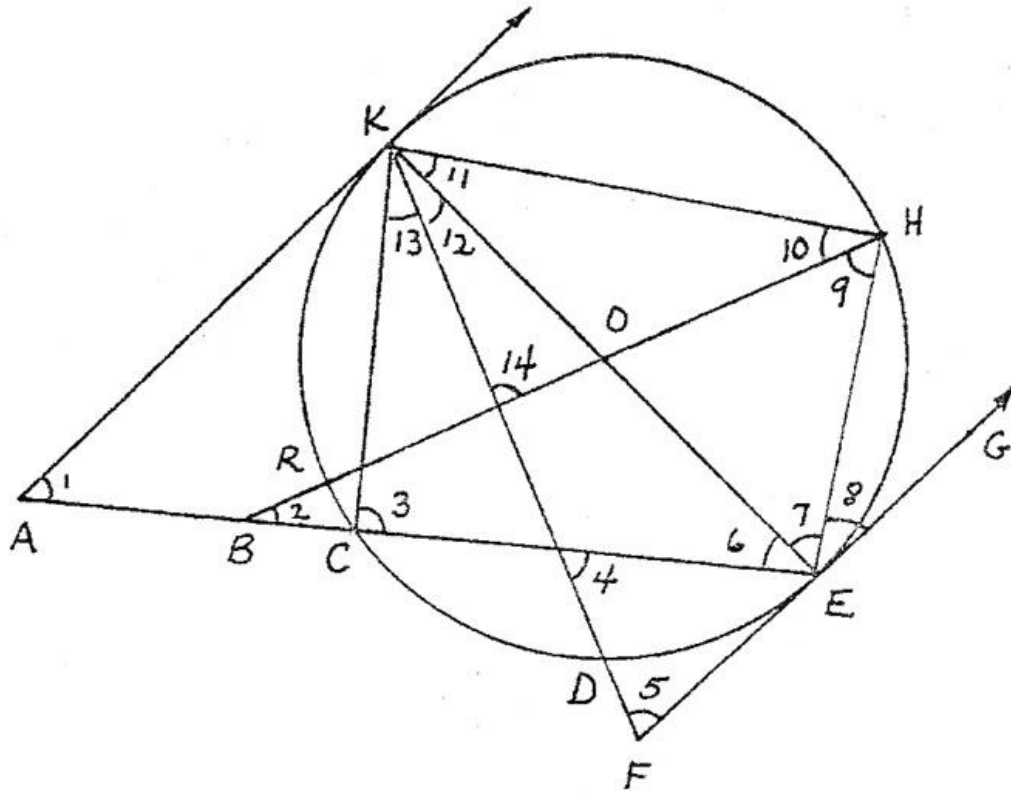
- H 1.  $m\angle 1 = 70^\circ$
- C 2.  $m\angle 2 = 35^\circ$
- G 3.  $m\angle 3 = 60^\circ$
- B 4.  $m\angle 4 = 30^\circ$
- F 5.  $m\angle 5 = 55^\circ$
- E 6.  $m\angle 6 = 50^\circ$
- I 7.  $m\angle 7 = 75^\circ$
- A 8.  $m\angle 8 = 25^\circ$
- J 9.  $m\angle 9 = 80^\circ$
- D 10.  $m\angle 10 = 45^\circ$



In Diagram 2 below:  $\overline{RH}$  and  $\overline{KE}$  are diameters.  $\overline{FE}$  is a tangent.

$m\angle HOE = 70^\circ$ ,  $m(\text{arc } CR) = 10^\circ$ ,  $m(\text{arc } DE) = 60^\circ$ .

Find the measures of each of the following angles:



- U 11.  $m\angle 3 = 90^\circ$
- P 12.  $m\angle 1 = 50^\circ$
- L 13.  $m\angle 13 = 20^\circ$
- Q 14.  $m\angle 7 = 55^\circ$
- M 15.  $m\angle 12 = 30^\circ$
- Q 16.  $m\angle 9 = 55^\circ$
- T 17.  $m\angle 14 = 80^\circ$
- M 18.  $m\angle 2 = 30^\circ$
- N 19.  $m\angle 11 = 35^\circ$
- N 20.  $m\angle 10 = 35^\circ$
- R 21.  $m\angle 5 = 60^\circ$
- N 22.  $m\angle 8 = 35^\circ$
- S 23.  $m\angle 4 = 70^\circ$
- O 24.  $m\angle 6 = 40^\circ$