1.

Change to degrees and minutes.

a. $61\frac{2}{3}^\circ$

b. $71.7^\circ$

2.

Change to fractional degrees.

a. $132^\circ30'$

b. $19^\circ45'$
4.

a. \(\overrightarrow{QV} \cap \overrightarrow{TS} = \)

b. \(\overrightarrow{WP} \cap \overrightarrow{VR} = \)

c. \(\overrightarrow{WP} \cup \overrightarrow{VR} = \)

d. \(\overrightarrow{SQ} \cup \overrightarrow{SR} = \)

e. How many angles have vertex Q?

5.

Evaluate:

a. \(49^\circ32'55'' + 37^\circ27'15''\)

b. \(123^\circ15' - 40^\circ26'\)
8. If $\angle CBD \cong \angle DBE$, find $m \angle A$

9. Find the measure of the angle formed by the hands of a clock at the following times:
   a. 3:00
   b. 4:30
   c. 7:20
   d. 1:45

10. Using the number line shown:
   a. Find $PQ$
   b. If $R$'s coordinate is 7, why is $PQ \neq QR$?
   c. What must the coordinate of $R$ be in order for $Q$ to be the midpoint of $PR$?
11.  
\[ \angle CAR \text{ is a right angle and } m\angle CAT = 37^\circ66'10'' \]

Find \( m\angle RAT \)

15.  
Given:  
\[ \angle 1 \equiv \angle 2 \]
\[ m\angle 1 = x + 14 \]
\[ m\angle 2 = y - 3 \]

Find \( y \) in terms of \( x \)

16.  
If \( \angle POA \) is a right angle and \( \angle POC \) is 3 times as large as \( \angle COA \), find \( m\angle POC \).
17. Using the diagram shown and the fact that $\angle P$ is acute,

   a. What are the restrictions on $m\angle P$?

   

   b. What are the restrictions on $x$?

20. Change $15\frac{2}{9}$° to degrees, minutes, and seconds

21. Given: $\angle TRS$ is a straight angle
   $
   \angle TRX$ is a right angle
   $m\angle TRS = 2x + 5y$
   $m\angle XRS = 3x + 3y$

Solve for $x$ and $y$.  

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23. Change $72^\circ 22' 30''$ to fractional degrees.