

Find the measure of (a) the complement and (b) the supplement of an angle with the given measure

15. 54°

$$\begin{array}{r} 90^\circ \\ - 54^\circ \\ \hline \end{array}$$

$36^\circ =$ Complementary angle

$$\begin{array}{r} 180^\circ \\ - 54^\circ \\ \hline \end{array}$$

$126^\circ =$ Supplementary angle

19. a) $14^\circ 20'$

$$\begin{array}{r} 90^\circ \\ - 15^\circ \\ \hline \end{array}$$

$$\begin{array}{r} 74^\circ 60' \\ - 20' \\ \hline \end{array}$$

$74^\circ 40' =$ comp angle

21. a) $20^\circ 10' 30''$

$$\begin{array}{r} 90^\circ \\ - 21^\circ \\ \hline \end{array}$$

$$\begin{array}{r} 68^\circ 60' \\ - 11' \\ \hline \end{array}$$

$$68^\circ 49'$$

$$\begin{array}{r} 68^\circ 48' 60'' \\ - 30'' \\ \hline \end{array}$$

$$68^\circ 48' 30'' = 68^\circ 48' 30''$$

Convert each angle measure to degrees, minutes, and seconds. If applicable, round to the nearest second.

69. -18.515°

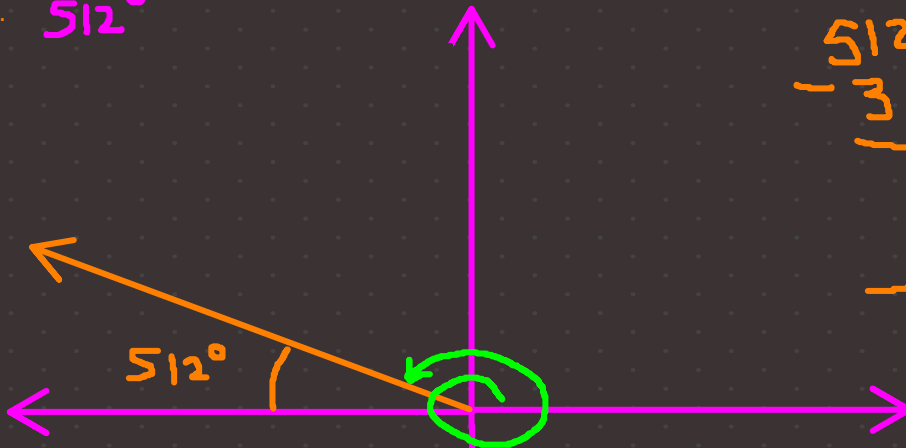
$$.5 \cdot 60' = 30'$$

$$.015 \cdot 3600'' = 54''$$

$$-18^\circ 30' 54''$$

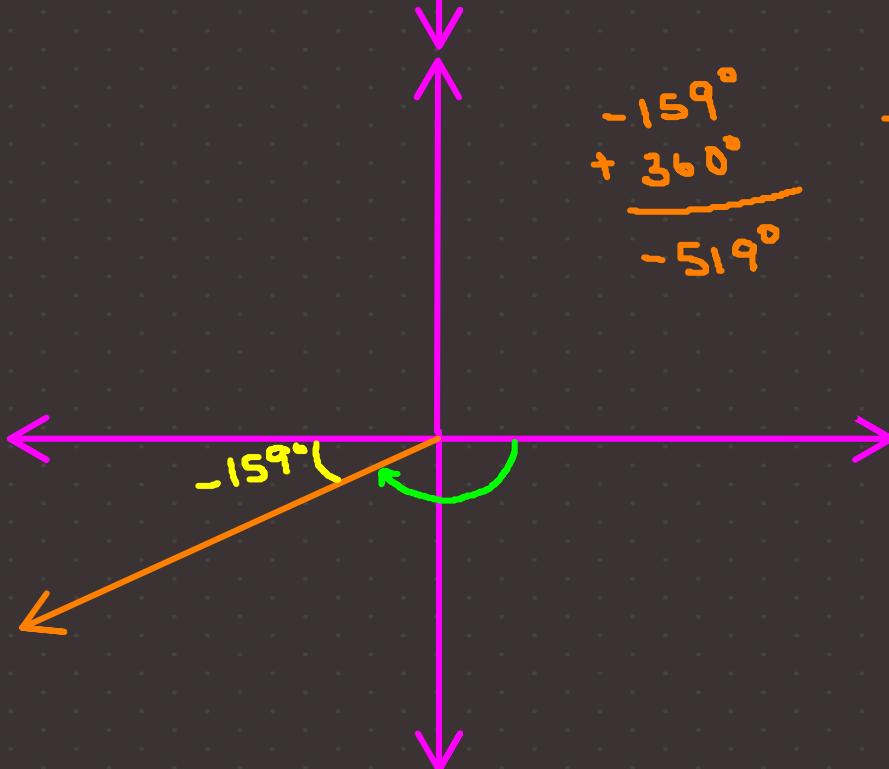
Sketch each angle in standard position. Draw an arrow representing the correct amount of rotation. Find the measure of two other angles, one positive and one negative, that are coterminal with the given angle. Give the quadrant of each angle, if applicable.

116. 512°



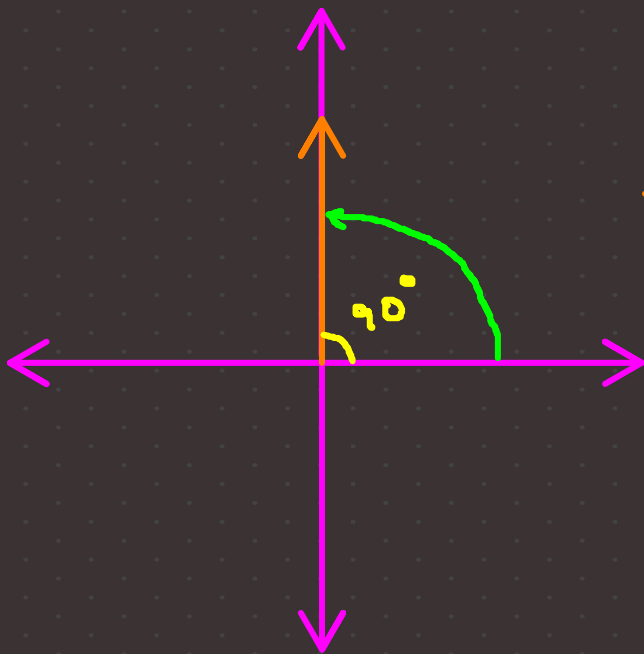
$$\begin{array}{r} 512^\circ \\ - 360^\circ \\ \hline 152^\circ \\ - 360^\circ \\ \hline -208^\circ \end{array} \quad \begin{array}{r} 512^\circ \\ + 360^\circ \\ \hline 872^\circ \end{array}$$

118.



$$\begin{array}{r} -159^\circ \\ + 360^\circ \\ \hline -519^\circ \end{array} \quad \begin{array}{r} -159^\circ \\ - 360^\circ \\ \hline 201^\circ \end{array}$$

119.



$$\begin{array}{r} 90^\circ \\ - 360^\circ \\ \hline -270 \end{array}$$

$$\begin{array}{r} 90 \\ + 360 \\ \hline 450 \end{array}$$

125. A tire is rotating 600 times/min. Through how many degrees does a point on the edge of the tire move in 1/2 sec?

$$360^\circ \cdot 600 = 216,000^\circ / \text{min}$$

$$216,000^\circ \cdot 60 \text{ sec} = 12,960,000^\circ / 60 \text{ sec}$$

$$\begin{array}{r} 12,960,000^\circ \\ \div 60 \text{ sec} \\ \hline \end{array}$$

$$216,000^\circ$$

$$\div 2$$

$$108,000^\circ$$

$$\div 60$$

$$1800^\circ / .5 \text{ sec}$$