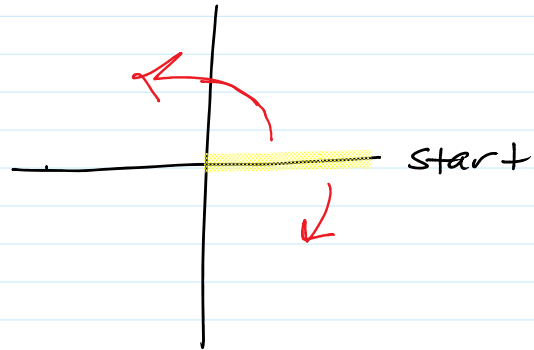
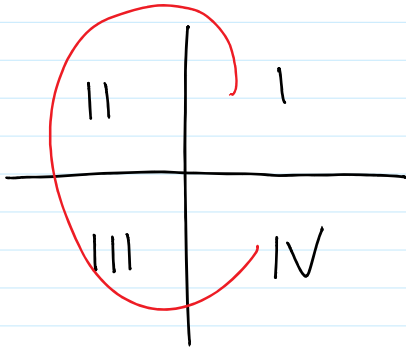
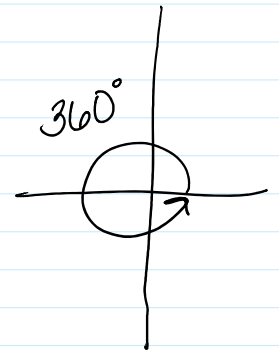
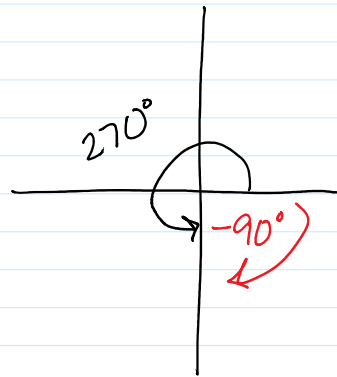
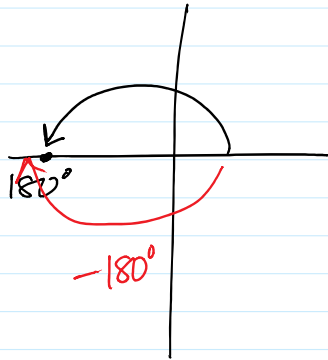
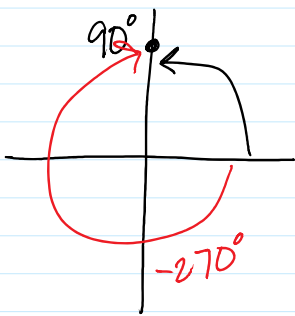


# Angles in the coordinate plane



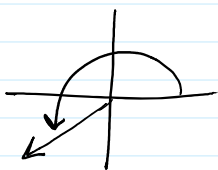
<http://www.mathopenref.com/triangle.html>

## Quadrantal Angles



Draw an angle with measure:

A.  $230^\circ$



B.  $-36^\circ$



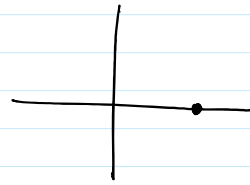
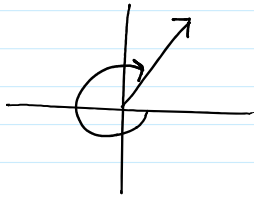
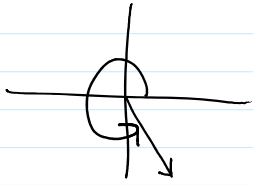
C.  $180^\circ$



D.  $300^\circ$

F.  $-300^\circ$

F.  $0^\circ$



What rotation angle is ...

A.  $\frac{1}{4}$  of a circle  
 $90^\circ$

B.  $\frac{2}{5}$  of a circle  
 $144^\circ$

C.  $\frac{5}{3}$  of a circle  
 $600^\circ$

D.  $\frac{11}{6}$  of a circle  
 $660^\circ$

<http://www.mathopenref.com/coterminal.html>

Find 2 positive and 2 negative angles coterminal with  $124^\circ$ .

$$\begin{array}{r} 360 \\ -124 \\ \hline 236 \end{array}$$

$$124^\circ + 360^\circ = 484^\circ$$

$$124^\circ - 360^\circ = -236^\circ$$

$$484^\circ + 360^\circ = 844^\circ$$

$$-236^\circ - 360^\circ = -596^\circ$$

### Conversions

convert from degrees to DMS without a calculator

A.  $13 \frac{5}{36}^\circ$   $5^\circ \cdot \frac{5 \cdot 60}{36} = 25' = 8 \frac{1}{3}'$

A.  $13 \frac{5}{36}^\circ$

$$13^\circ 8' 20''$$

$$\frac{5}{36} \cdot \frac{60'}{1^\circ} = \frac{25}{3}' = 8 \frac{1}{3}'$$

$$\frac{1}{3}' \cdot \frac{60''}{1'} = 20''$$

B.  $27 \frac{17}{45}^\circ$

$$27^\circ 22' 40''$$

$$\frac{17}{45} \cdot \frac{60'}{1^\circ} = \frac{68}{3}' = 22 \frac{2}{3}'$$

$$\frac{2}{3}' \cdot \frac{60''}{1'} = \frac{120}{3}'' = 40''$$

Convert  $18.314^\circ$  with a calculator

Convert from DMS to degrees without a calculator

A.  $81^\circ 14' 15''$

$$15'' \cdot \frac{1'}{60''} = \frac{1}{4}'$$

$$\frac{14}{4}' \cdot \frac{1^\circ}{60'} = \frac{19}{80}^\circ$$

$$14 \frac{1}{4}' \rightarrow \frac{57}{4}'$$

$$81 \frac{19}{80}^\circ$$

B.  $31^\circ 26' 36''$

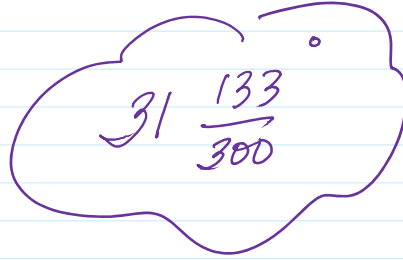
$$\frac{36}{60}' = \frac{3}{5}'$$

$$\frac{26}{5}' \cdot \frac{1^\circ}{60'} = \frac{133}{300}^\circ$$

b.  $31^\circ 26' 36''$   
 $\frac{36''}{60} = \frac{3'}{5}$

$$26 \frac{3'}{5} = \frac{133'}{5}$$

$$\frac{133'}{5} \cdot \frac{1^\circ}{60'} = \frac{133}{300}^\circ$$



$31 \frac{133}{300}$

Convert  $57^\circ 11' 13''$  to degrees WITH a calculator