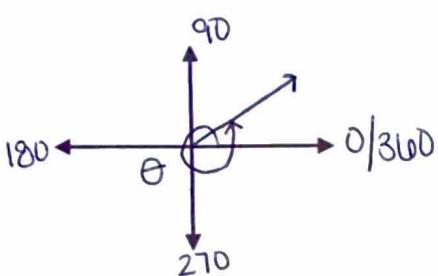


Chapter 7 Review

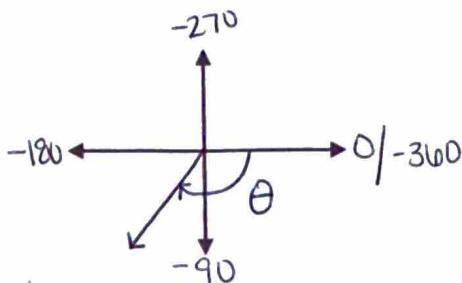
yellow highlight = optional

Graphing Angles: Draw angle with the given measure in standard position.

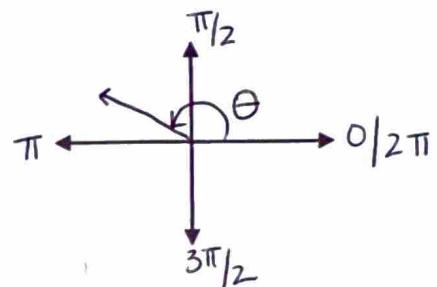
1. 390°



2. -120°



3. $\frac{5\pi}{6}$

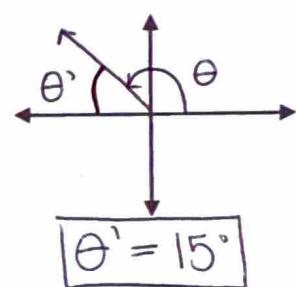
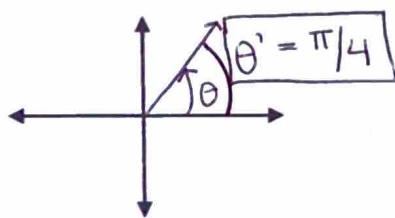
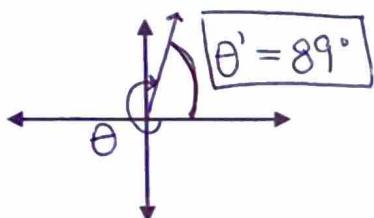


Reference Angles: Find the reference angles for the following:

1. -271°

2. $\frac{\pi}{4}$

3. 165°



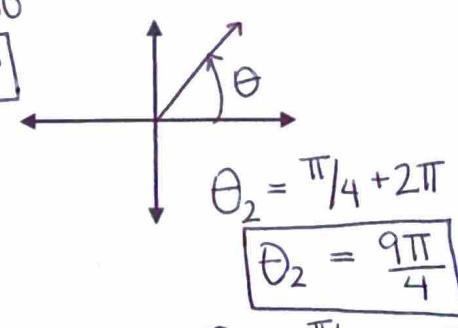
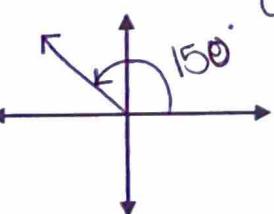
Coterminal Angles: Find one positive and one negative angle measure that are coterminal for each angle given.

1. 150°

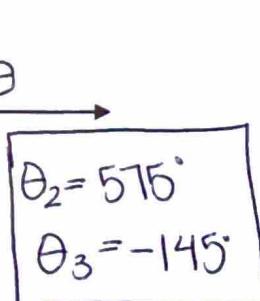
$$\theta_2 = 150 + 360^\circ$$

$$\theta_2 = 510^\circ$$

2. $\frac{\pi}{4}$



3. 215°



Determine if given pair of angles are coterminal.

4. $190^\circ, -170^\circ$

Start
190 - 360 = -170 ✓

Yes

5. $150^\circ, 880^\circ$

$$150 + 360 = 510$$

$$510 + 360 = 870^\circ$$

No

6. $-80^\circ, -440^\circ$

Start
 $-80 + 360 = -440^\circ$ ✓

Yes

Converting Between Degrees & Radians:

$$1. 170^\circ \left(\frac{\pi}{180^\circ} \right)$$

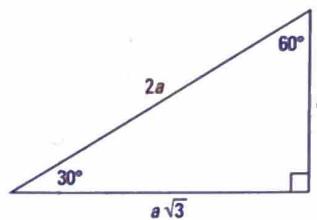
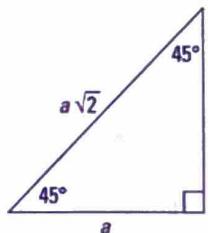
$$\frac{170\pi}{180} = \boxed{\frac{17\pi}{18}}$$

$$2. -\frac{5\pi}{6} \left(\frac{180}{\pi} \right) = \boxed{-150^\circ}$$

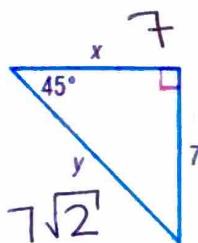
$$3. -225^\circ \left(\frac{\pi}{180^\circ} \right)$$

$$-\frac{5\pi}{4}$$

Special Right Angle Triangle:



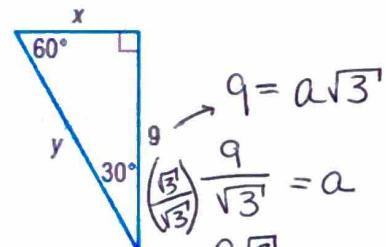
Find the missing sides:



A right-angled triangle with a horizontal base labeled x , a vertical height, and a hypotenuse labeled 21. The angle at the bottom right vertex is marked as 45° . A dashed line from the top vertex to the hypotenuse creates a smaller right-angled triangle. The ratio of the vertical leg to the hypotenuse of this smaller triangle is labeled $\frac{21}{\sqrt{2}}$.

$$x = \frac{21\sqrt{2}}{2}$$

$$\begin{array}{l} x = 4\sqrt{3} \\ y = 8 \end{array}$$



$$\boxed{x = 3\sqrt{3}' \\ y = 6\sqrt{3}'}$$

Find the exact value of:

$$1. \sin \frac{7\pi}{4} = \frac{-\sqrt{2}}{\sqrt{2}}$$

$$2. \cos \frac{\pi}{2} = 0$$

$$3. \sin 240^\circ = -\frac{\sqrt{3}}{2}$$

$$\frac{\sqrt{3}}{2}$$

Find exact value of θ in degrees and radians for the following function.

$$5. \sin \theta = -\frac{\sqrt{3}}{2}$$

$$6. \cos\theta = \frac{\sqrt{2}}{2}$$

$$7. \cos \theta = \frac{1}{2}$$

$$8. \sin \theta = -\frac{1}{2}$$

$$\theta = 240^\circ \text{ or } 300^\circ$$

$$\theta = 45^\circ \text{ or } 315^\circ$$

$$\theta = 100^\circ : 300^\circ$$

$$\theta = 210^\circ \text{ or } 330^\circ$$

$$\theta = \frac{4\pi}{3} \text{ or } \frac{5\pi}{3}$$

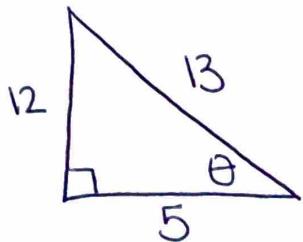
$$\theta = \pi/4 : 7\pi/4$$

$$\theta = \pi/3 \approx 5\pi/3$$

$$\theta = 7\pi/6 : 11\pi/6^2$$

Right Triangle Trig:

1. Given $\sin \theta = \frac{12}{13}$ find the other 5 trig functions.



$$\begin{aligned} 13^2 &= 12^2 + b^2 \\ 169 &= 144 + b^2 \\ 25 &= b^2 \\ 5 &= b \end{aligned}$$

$$\csc \theta = \frac{13}{12}$$

$$\sec \theta = \frac{13}{5}$$

$$\cos \theta = \frac{5}{13}$$

$$\tan \theta = \frac{12}{5}$$

$$\cot \theta = \frac{5}{12}$$

2. Given the triangle find all 6 trig functions.

$$\sin \theta = \frac{4}{\sqrt{185}}$$

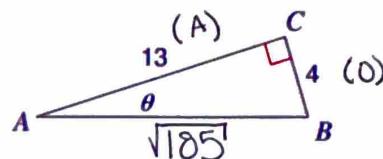
$$\csc \theta = \frac{\sqrt{185}}{4}$$

$$\cos \theta = \frac{13}{\sqrt{185}}$$

$$\sec \theta = \frac{\sqrt{185}}{13}$$

$$\tan \theta = \frac{4}{13}$$

$$\cot \theta = \frac{13}{4}$$

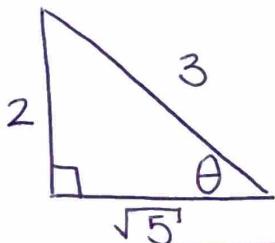


$$13^2 + 4^2 = c^2$$

$$169 + 16 = c^2$$

$$\sqrt{185} = c$$

3. Given $\cot \theta = \frac{\sqrt{5}}{2}$ find the other 5 trig functions.



$$\begin{aligned} (\sqrt{5})^2 + 2^2 &= c^2 \\ 5 + 4 &= c^2 \\ 9 &= c^2 \\ 3 &= c \end{aligned}$$

$$\sin \theta = \frac{2}{3}$$

$$\csc \theta = \frac{3}{2}$$

$$\cos \theta = \frac{\sqrt{5}}{3}$$

$$\sec \theta = \frac{3}{\sqrt{5}}$$

$$\tan \theta = \frac{2}{\sqrt{5}}$$

$$\cot \theta = \frac{\sqrt{5}}{2}$$