

1. Determine the quadrant that contains the terminal side of an angle  $-380^\circ$ .

select

*III*

select

*I*

select

*II*

select

*IV*

2. Determine the quadrant that contains the terminal side of an angle measuring  $\frac{-7\pi}{6}$ .

*II*

*III*

*I*

*IV*

The value of a cosine is positive in which quadrants?

**Possible Answers:**

The 3rd only

The 4th only

The 1st and 4th

The 1st and 3rd



**Correct answer:**

The 1st and 4th

**Explanation:**

The cosine is positive in the 1<sup>st</sup> and 4<sup>th</sup> quadrants and negative in 2<sup>nd</sup> and 3<sup>rd</sup>

If  $\sin(x) = 0.41$ , what is  $\sin(-x)$ ? Round to the nearest hundredth.

Possible Answers:

0.41

-0.82

-0.41

0.54

0.82



Correct answer:

-0.41

Explanation:

Recall that the sine wave is symmetrical with respect to the origin. Therefore, for any value  $(x, y)$ , the value for  $-x$  is  $-y$ . Therefore, if  $\sin(x)$  is  $0.41$ , then for  $-x$ , it will be  $-0.41$ .

What is the reference angle for  $257^\circ$  ?

Possible Answers:

$103^\circ$

$77^\circ$

$257^\circ$

$13^\circ$

$93^\circ$



Correct answer:

$77^\circ$

**Explanation:**

A reference angle is the smallest possible angle between a given angle measurement and the x-axis.

In this case, our angle  $257^\circ$  lies in Quadrant III, so the angle is found by the formula  $\angle A_r = \angle A - 180^\circ$ .

$$\angle A_r = \angle A - 180^\circ = 257^\circ - 180^\circ = 77^\circ$$

Thus, the reference angle for  $257^\circ$  is  $77^\circ$ .

What is the reference angle for  $125^\circ$  ?

Possible Answers:

$75^\circ$

$235^\circ$

$35^\circ$

$125^\circ$

$55^\circ$



Correct answer:

$55^\circ$

**Explanation:**

A reference angle is the smallest possible angle between a given angle measurement and the x-axis.

In this case, our angle  $125^\circ$  lies in Quadrant II, so we can find our reference angle using the formula

$$\angle A_r = 180^\circ - \angle A.$$

$$\angle A_r = 180^\circ - \angle A = 180^\circ - 125^\circ = 55^\circ$$

Thus, the reference angle for  $125^\circ$  is  $55^\circ$ .

What is the reference angle for  $125^\circ$  ?

Possible Answers:

$75^\circ$

$235^\circ$

$35^\circ$

$125^\circ$

$55^\circ$



Correct answer:

$55^\circ$

**Explanation:**

A reference angle is the smallest possible angle between a given angle measurement and the x-axis.

In this case, our angle  $125^\circ$  lies in Quadrant II, so we can find our reference angle using the formula

$$\angle A_r = 180^\circ - \angle A.$$

$$\angle A_r = 180^\circ - \angle A = 180^\circ - 125^\circ = 55^\circ$$

Thus, the reference angle for  $125^\circ$  is  $55^\circ$ .

What is the reference angle of an angle that measures 3510 in standard position?

Possible Answers:

369

109

90

351



Correct answer:

90

Explanation:

$$3600 - 3510 = 90$$



What is the reference angle for  $855^\circ$  ?

Possible Answers:

$55^\circ$

$45^\circ$

$720^\circ$

$360^\circ$

$495^\circ$



Correct answer:

$45^\circ$

**Explanation:**

The reference angle is between  $0^\circ$  and  $90^\circ$ , starting on the positive  $x$ -axis and rotating in a counter-clockwise manor.

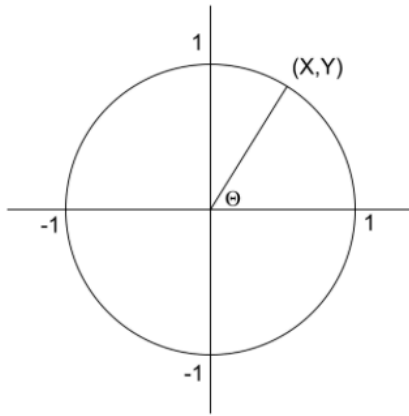
To find the reference angle, we subtract  $360^\circ$  for each complete revolution until we get a positive number less than  $360^\circ$ .

$$855 - 360 = 495$$

$$495 - 360 = 135$$

$855^\circ$  is equal to two complete revolutions, plus a  $135^\circ$  angle. Since  $135^\circ$  is in Quadrant II, we subtract it from  $180^\circ$  to get our reference angle:

$$180 - 135 = 45^\circ$$



In the unit circle above, if  $\Theta = 30^\circ$ , what are the coordinates of  $(X, Y)$ ?

Possible Answers:

$$\left(\frac{\sqrt{3}}{2}, \frac{\sqrt{3}}{2}\right)$$

$$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$$

$$\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$$

$$\left(1, \frac{1}{2}\right)$$

$$\left(\frac{1}{2}, \frac{1}{2}\right)$$



Correct answer:

$$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$$

Explanation:

On the unit circle,  $(X,Y) = (\cos \Theta, \sin \Theta)$ .

$$(\cos \Theta, \sin \Theta) = (\cos 30^\circ, \sin 30^\circ) = \left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$$

What is the reference angle for  $45^\circ$  ?

Possible Answers:

$90^\circ$

$180^\circ$

$315^\circ$

$45^\circ$

$135^\circ$



Correct answer:

$45^\circ$

**Explanation:**

A reference angle is the smallest possible angle between a given angle measurement and the x-axis.

In this case, our angle  $45^\circ$  lies in Quadrant I, so the angle is its own reference angle.

Thus, the reference angle for  $45^\circ$  is  $45^\circ$ .