THE UNIVERSITY OF AKRON
Theoretical and Applied Mathematics

Memory Flash Cards

The Trigonometric Functions

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and
Tom Price

Begin

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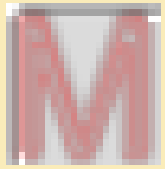
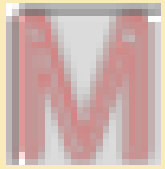


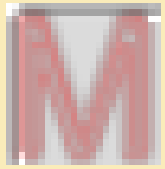
Let P be the point on the unit circle with coordinates (x, y) that determines the angle in standard position of measure t rad. Give the values of

$$\sin t \qquad \text{and} \qquad \tan t$$



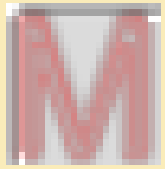
Let P be the point on the unit circle with coordinates (x, y) that determines the angle in standard position of measure t rad. Give the values of

$$\cot t \qquad \text{and} \qquad \csc t$$

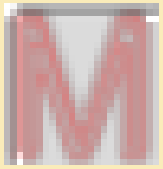


Let P be the point on the unit circle with coordinates (x, y) that determines the angle in standard position of measure t rad. Give the values of

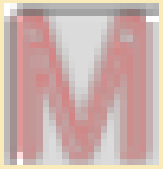
$$\cos t \qquad \text{and} \qquad \sec t$$



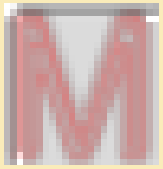
Express $\sec t$ in terms of another trigonometric function.



Express $\tan t$ in terms of other trigonometric functions.

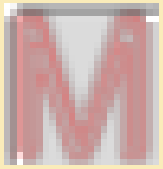


Express $\cot t$ in terms of other trigonometric functions.



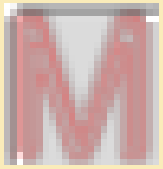
Give the values of

$$\sin\frac{\pi}{4} \quad \text{and} \quad \sec\frac{\pi}{4}.$$



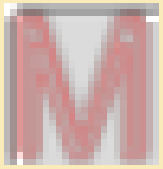
Give the value of

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



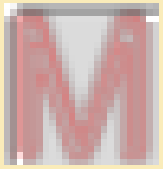
Give the values of

$$\tan\frac{\pi}{3} \quad \text{and} \quad \sec\frac{\pi}{3}.$$



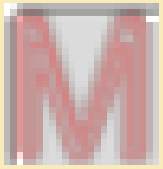
Give the values of

$$\sin\frac{\pi}{3} \quad \text{and} \quad \cot\frac{\pi}{3}.$$



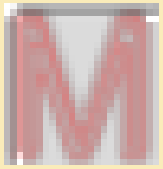
Give the values of

$$\cos\frac{\pi}{3} \quad \text{and} \quad \csc\frac{\pi}{3}.$$



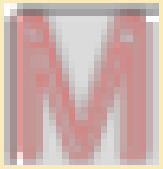
Give the values of

$$\cos\frac{\pi}{6} \quad \text{and} \quad \sin\frac{\pi}{6}.$$



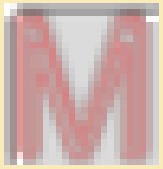
Give the values of

$$\tan\frac{\pi}{6} \quad \text{and} \quad \sec\frac{\pi}{6}.$$

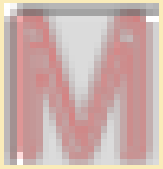


Give the values of

$$\cot\frac{\pi}{6} \quad \text{and} \quad \csc\frac{\pi}{6}.$$

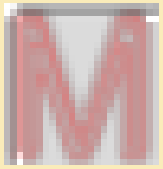


Give the values of $\sin \frac{3\pi}{4}$ and $\sec \frac{5\pi}{4}$.



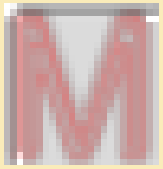
Give the value of $\tan \frac{-3\pi}{4}$.

Hint Soln Next



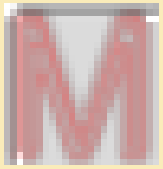
Give the values of

$$\tan\frac{2\pi}{3} \quad \text{and} \quad \sec\frac{2\pi}{3}.$$



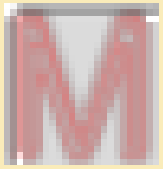
Give the values of

$$\sin\frac{-5\pi}{3} \quad \text{and} \quad \cot\frac{-5\pi}{3}.$$



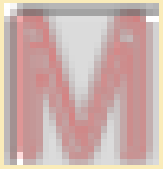
Give the values of

$$\cos\frac{4\pi}{3} \quad \text{and} \quad \csc\frac{4\pi}{3}.$$



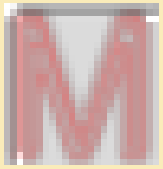
Give the values of

$$\cos\frac{5\pi}{6} \quad \text{and} \quad \sin\frac{5\pi}{6}.$$



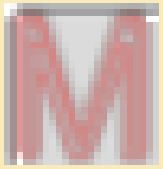
Give the values of

$$\tan\frac{-\pi}{6} \quad \text{and} \quad \sec\frac{-\pi}{6}.$$



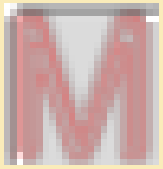
Give the values of

$$\cot \frac{-11\pi}{6} \quad \text{and} \quad \csc \frac{-11\pi}{6}.$$



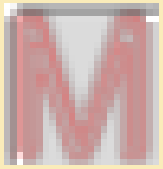
Give the values of

$$\sin 30^\circ \quad \text{and} \quad \tan 30^\circ .$$



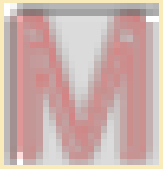
Give the values of

$$\cos(-60^\circ) \quad \text{and} \quad \tan(-60^\circ).$$



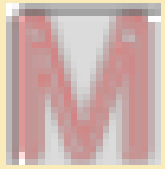
Give the values of

$$\sec 210^\circ \quad \text{and} \quad \cot 210^\circ.$$



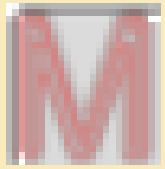
Give the values of

$$\sin(-135^\circ) \quad \text{and} \quad \cos(-135^\circ).$$



True or False:

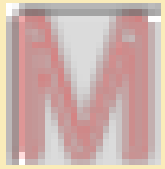
$$\tan t = \tan(t - \pi)$$



True or False:

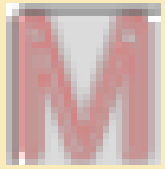
$$\sin(t + \pi) = -\sin t$$

Hint Soln Next



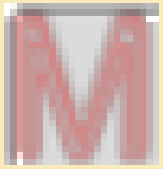
True or False:

$$\sin(t + \pi) = \cos t$$



True or False:

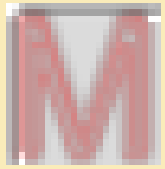
$$\sin \frac{\pi}{4} = \sin 135^\circ$$



True or False:

$$\cos(\alpha + 360^\circ) = \cos\alpha$$

(Note: α represents a degree measure.)



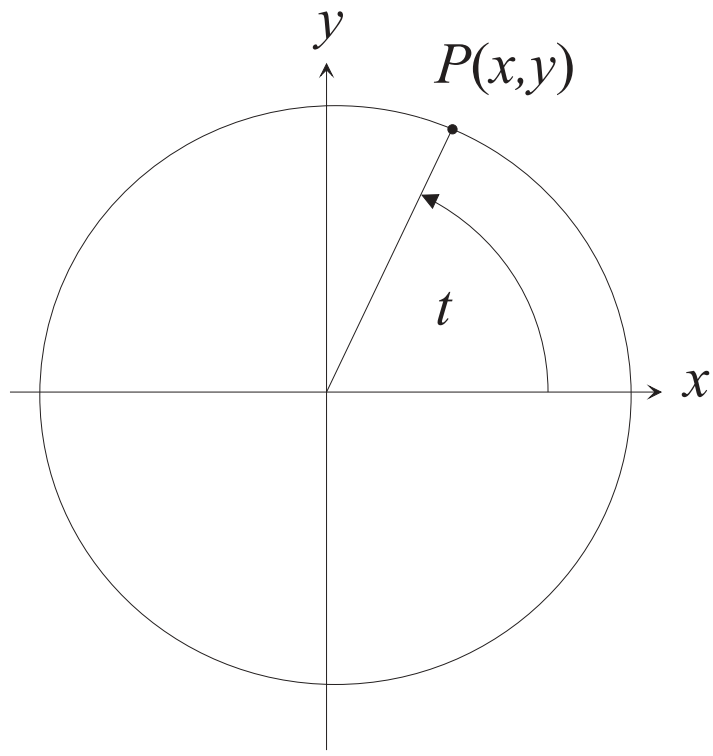
True or False:

$$\tan(\alpha + 90^\circ) = \tan\alpha$$

(Note: α represents a degree measure.)

HINT

Recall that $\sin t$ is defied to be the y-coordinate of P. See the figure below.



Soln Next

Answer: $\boxed{\sin t = y \qquad \text{and} \qquad \tan t = \frac{y}{x}}$

Next

HINT

Recall that

$$\csc t = \frac{1}{\sin t}.$$

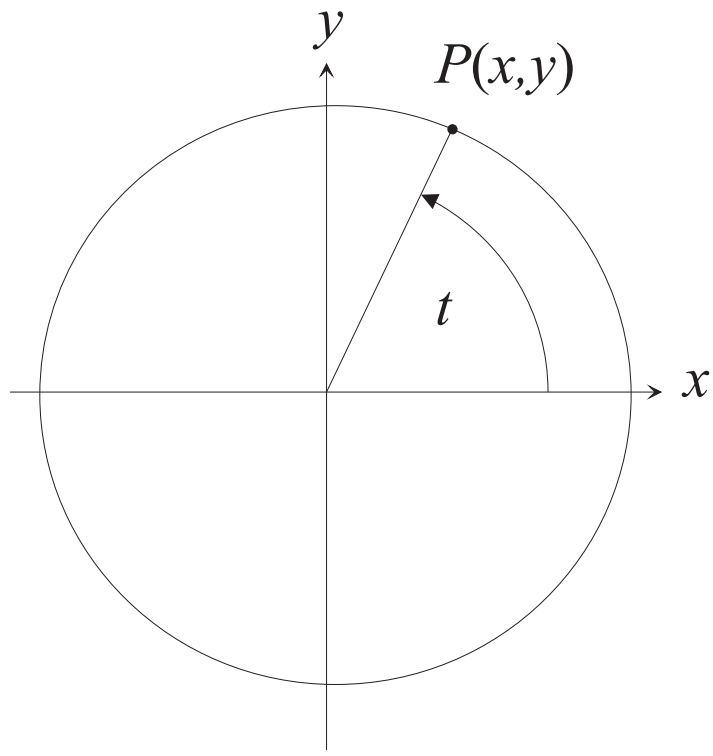
Soln Next

Answer: $\boxed{\cot t = \frac{x}{y} \qquad \text{and} \qquad \csc t = \frac{1}{y}}$

Next

HINT

Recall that $\cot t$ is defied to be the x-coordinate of P. See the figure below.



Soln Next

Answer: $\boxed{\cos t = x \qquad \text{and} \qquad \sec t = \frac{1}{x}}$

Next

HINT

Recall that

$$\sec t = \frac{1}{x}$$

Answer: $\boxed{\sec t = \frac{1}{x} = \frac{1}{\cos t}}$

Next

HINT

This question has two answers. Recall that $\tan t = \dfrac{y}{x}$

Answer: $\boxed{\tan t = \frac{y}{x} = \frac{1}{\cot t} = \frac{\sin t}{\cos t}}$

Next

HINT

This question has two answers. Recall that $\cot t = \dfrac{x}{y}$

Answer: $\boxed{\cot t = \dfrac{x}{y} = \dfrac{1}{\tan t} = \dfrac{\cos t}{\sin t}}$

Next

HINT

Recall that

$$\sin \frac{\pi}{4} = \cos \frac{\pi}{4}$$

Answer: $\boxed{\sin\frac{\pi}{4} = \frac{1}{\sqrt{2}} \quad \text{and} \quad \sec\frac{\pi}{4} = \sqrt{2}}$

Next

HINT

Recall that

$$\sin \frac{\pi}{4} = \cos \frac{\pi}{4}$$

Answer: $\boxed{\tan \frac{\pi}{4} = 1}$

Next

HINT

Recall that

$$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$$

Answer: $\boxed{\tan\frac{\pi}{3} = \sqrt{3} \quad \text{and} \quad \sec\frac{\pi}{3} = 2}$

Next

HINT

Recall that

$$\sin \frac{\pi}{3} = \cos \frac{\pi}{6}$$

Answer: $\boxed{\sin\frac{\pi}{3} = \frac{\sqrt{3}}{2} \quad \text{and} \quad \cot\frac{\pi}{3} = \frac{\sqrt{3}}{3}}$

Next

HINT

Recall that

$$\sin \frac{\pi}{3} = \cos \frac{\pi}{6}$$

Answer: $\boxed{\cos\frac{\pi}{3} = \frac{1}{2} \quad \text{and} \quad \csc\frac{\pi}{3} = \frac{2}{\sqrt{3}}}$

Next

HINT

Recall that

$$\sin \frac{\pi}{6} = \cos \frac{\pi}{3}$$

Answer: $\boxed{\cos\frac{\pi}{6} = \frac{\sqrt{3}}{2} \quad \text{and} \quad \sin\frac{\pi}{6} = \frac{1}{2}}$

Next

HINT

Recall that

$$\sin \frac{\pi}{6} = \frac{\sqrt{3}}{2}$$

Soln Next

Answer: $\boxed{\tan\frac{\pi}{6} = \frac{1}{\sqrt{3}} \quad \text{and} \quad \sec\frac{\pi}{6} = \frac{2}{\sqrt{3}}}$

Next

HINT

Recall that

$$\tan \frac{\pi}{6} = \frac{1}{\sqrt{3}}$$

Answer: $\boxed{\cot\frac{\pi}{6} = \sqrt{3} \quad \text{and} \quad \csc\frac{\pi}{6} = 2}$

Next

HINT

Recall that

$$\sin \frac{3\pi}{4} = \sin \frac{\pi}{4}$$

Answer: $\boxed{\sin\frac{3\pi}{4} = \frac{1}{\sqrt{2}} \quad \text{and} \quad \sec\frac{5\pi}{4} = -\sqrt{2}}$

Next

HINT

Recall that

$$\tan(-t) = -\tan t$$

Answer: $\boxed{\tan \frac{-3\pi}{4} = 1}$

Next

HINT

Recall that

$$\sin \frac{2\pi}{3} = \frac{\sqrt{3}}{2}$$

Answer:

$$\tan\frac{2\pi}{3} = -\sqrt{3} \quad \text{and} \quad \sec\frac{2\pi}{3} = -2$$

Next

HINT

Recall that

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

Answer:

$$\sin\frac{-5\pi}{3} = \frac{\sqrt{3}}{2} \quad \text{and} \quad \cot\frac{-5\pi}{3} = \frac{\sqrt{3}}{3}$$

Next

HINT

Recall that

$$\cos \frac{\pi}{3} = \frac{1}{2}$$

Answer: $\boxed{\cos\frac{4\pi}{3} = -\frac{1}{2} \quad \text{and} \quad \csc\frac{4\pi}{3} = -\frac{2}{\sqrt{3}}}$

Next

HINT

Recall that

$$\sin \frac{\pi}{6} = \cos \frac{\pi}{3}$$

Answer: $\boxed{\cos\frac{5\pi}{6} = -\frac{\sqrt{3}}{2} \quad \text{and} \quad \sin\frac{5\pi}{6} = \frac{1}{2}}$

Next

HINT

Recall that

$$\sec \frac{\pi}{6} = \frac{2}{\sqrt{3}}$$

Answer:

$$\tan\frac{-\pi}{6} = -\frac{1}{\sqrt{3}} \quad \text{and} \quad \sec\frac{-\pi}{6} = \frac{2}{\sqrt{3}}$$

Next

HINT

Recall that

$$\cot \frac{11\pi}{6} = \cot \frac{-\pi}{6}$$

Answer:

$$\cot \frac{-11\pi}{6} = \sqrt{3} \quad \text{and} \quad \csc \frac{-11\pi}{6} = 2$$

Next

HINT

Recall that

$$\tan 30^\circ = \tan \frac{\pi}{6}$$

Answer: $\boxed{\sin 30^\circ = \frac{1}{2} \quad \text{and} \quad \tan 30^\circ = \frac{1}{\sqrt{3}}}$

Next

HINT

Recall that

$$\sin(-60^\circ) = -\sin 60^\circ$$

Answer:

$$\sin(-60°) = -\frac{\sqrt{3}}{2} \quad \text{and} \quad \tan(-60°) = -\sqrt{3}$$

Next

HINT

Recall that

$$\sec 210^\circ = -\frac{1}{\cos 30^\circ}$$

Answer:

$$\sec 210^\circ = -\frac{2}{\sqrt{3}} \quad \text{and} \quad \cot 210^\circ = \sqrt{3}$$

Next

HINT

Recall that

$$\sin(-135^\circ) = -\sin 135^\circ$$

Answer:

$$\sin(-135°) = -\frac{\sqrt{2}}{2} \quad \text{and} \quad \cos(-135°) : \; -\frac{\sqrt{2}}{2}$$

◀

Next

HINT

The period of the tangent function is π.

Answer: $\boxed{TRUE}$

◀

Next

HINT

Envision a figure depicting the angles of measure $(t + \pi)$ rad and t rad .

Answer: $\boxed{TRUE}$

◀

Next

HINT

Envision a figure depicting the angles of measure $(t + \pi)$ rad and t rad .

Answer: $\boxed{FALSE}$

Next

HINT

Recall that

$$\frac{3\pi}{4}\,\text{rad} = 135^\circ$$

Answer: $\boxed{TRUE}$

◀

Next

HINT

The period of the cosine function is 2π.

Answer: $\boxed{TRUE}$

◀

Next

HINT

Envision a figure depicting the angles of measure $(\alpha + 90°)$ and α.

Answer: $\boxed{FALSE}$

Next