mobius

Trigonometry Identities - Pythagorean Problem Sin to Cos (with Identity, Quadrant as Radians)

1 Using:

$$\sin^2(\alpha) = 1 - \cos^2(\alpha)$$
$$\frac{\pi}{2} < \alpha < \pi$$

Solve for cosine from sine using trig identities

Solve:

$$\sin(\alpha) = \frac{1}{4}$$
$$\cos(\alpha) = ?$$

A	B
$\cos(\alpha) = -\dfrac{\sqrt{15}}{4}$	$\cos(\alpha) = -\dfrac{\sqrt{15}}{\sqrt{15}}$

2 Using:

$$\sin^2(\alpha) = 1 - \cos^2(\alpha)$$
$$\frac{3\pi}{2} < \alpha < 2\pi$$

Solve for cosine from sine using trig identities

Solve:

$$\sin(\alpha) = -\frac{3}{4}$$
$$\cos(\alpha) = ?$$

A	B
$\cos(\alpha) = \dfrac{1}{4}$	$\cos(\alpha) = \dfrac{\sqrt{7}}{4}$

3 Using:

$$\sin^2(\theta) = 1 - \cos^2(\theta)$$
$$\pi < \theta < \frac{3\pi}{2}$$

Solve for cosine from sine using trig identities

Solve:

$$\sin(\theta) = -\frac{4}{5}$$
$$\cos(\theta) = ?$$

A	B
$\cos(\theta) = \dfrac{3}{5}$	$\cos(\theta) = -\dfrac{3}{5}$

4 Using:

$$\sin^2(\alpha) = 1 - \cos^2(\alpha)$$
$$\frac{3\pi}{2} < \alpha < 2\pi$$

Solve for cosine from sine using trig identities

Solve:

$$\sin(\alpha) = -\frac{1}{7}$$
$$\cos(\alpha) = ?$$

A	B
$\cos(\alpha) = \dfrac{2\sqrt{17}}{7}$	$\cos(\alpha) = \dfrac{4\sqrt{3}}{7}$

5 Using:

$$\sin^2(\beta) = 1 - \cos^2(\beta)$$
$$\frac{\pi}{2} < \beta < \pi$$

Solve for cosine from sine using trig identities

Solve:

$$\sin(\beta) = \frac{8}{9}$$
$$\cos(\beta) = ?$$

A	B
$\cos(\beta) = -\dfrac{\sqrt{17}}{3\sqrt{11}}$	$\cos(\beta) = -\dfrac{\sqrt{17}}{9}$

6 Using:

$$\sin^2(\beta) = 1 - \cos^2(\beta)$$
$$\pi < \beta < \frac{3\pi}{2}$$

Solve for cosine from sine using trig identities

Solve:

$$\sin(\beta) = -\frac{5}{6}$$
$$\cos(\beta) = ?$$

A	B
$\cos(\beta) = \dfrac{\sqrt{11}}{6}$	$\cos(\beta) = -\dfrac{\sqrt{11}}{6}$

7 Using:

$$\sin^2(\theta) = 1 - \cos^2(\theta)$$
$$\frac{3\pi}{2} < \theta < 2\pi$$

Solve for cosine from sine using trig identities

Solve:

$$\sin(\theta) = -\frac{5}{8}$$
$$\cos(\theta) = ?$$

A	B
$\cos(\theta) = \dfrac{\sqrt{39}}{8}$	$\cos(\theta) = -\dfrac{\sqrt{39}}{8}$

8 Using:

$$\sin^2(\beta) = 1 - \cos^2(\beta)$$
$$0 < \beta < \frac{\pi}{2}$$

Solve for cosine from sine using trig identities

Solve:

$$\sin(\beta) = \frac{1}{5}$$
$$\cos(\beta) = ?$$

A	B
$\cos(\beta) = \dfrac{\sqrt{6}}{5}$	$\cos(\beta) = \dfrac{2\sqrt{6}}{5}$