



Trigonometry Identities - Pythagorean Problem Sin to Cos (without Identity, Quadrant as Ratio)

1
 $\tan(\beta) \rightarrow$ negative
 —
 Solve for cosine from sine using trig identities

Solve:

$$\sin(\beta) = \frac{3}{9}$$

$$\cos(\beta) = ?$$

A	B
$\cos(\beta) = \frac{2\sqrt{2}}{3}$	$\cos(\beta) = -\frac{2\sqrt{2}}{3}$

2
 $\tan(\alpha) \rightarrow$ positive
 —
 Solve for cosine from sine using trig identities

Solve:

$$\sin(\alpha) = \frac{4}{5}$$

$$\cos(\alpha) = ?$$

A	B
$\cos(\alpha) = \frac{3}{5}$	$\cos(\alpha) = \frac{\sqrt{3}}{5}$

3
 $\tan(\gamma) \rightarrow$ negative
 —
 Solve for cosine from sine using trig identities

Solve:

$$\sin(\gamma) = -\frac{4}{7}$$

$$\cos(\gamma) = ?$$

A	B
$\cos(\gamma) = \frac{\sqrt{3}}{7}$	$\cos(\gamma) = \frac{\sqrt{33}}{7}$

4
 $\tan(\beta) \rightarrow$ positive
 —
 Solve for cosine from sine using trig identities

Solve:

$$\sin(\beta) = \frac{5}{9}$$

$$\cos(\beta) = ?$$

A	B
$\cos(\beta) = -\frac{2\sqrt{14}}{9}$	$\cos(\beta) = \frac{2\sqrt{14}}{9}$

5
 $\tan(\theta) \rightarrow$ negative
 —
 Solve for cosine from sine using trig identities

Solve:

$$\sin(\theta) = -\frac{1}{4}$$

$$\cos(\theta) = ?$$

A	B
$\cos(\theta) = \frac{\sqrt{15}}{4}$	$\cos(\theta) = -\frac{\sqrt{15}}{4}$

6
 $\tan(\alpha) \rightarrow$ negative
 —
 Solve for cosine from sine using trig identities

Solve:

$$\sin(\alpha) = -\frac{3}{8}$$

$$\cos(\alpha) = ?$$

A	B
$\cos(\alpha) = \frac{\sqrt{55}}{\sqrt{46}}$	$\cos(\alpha) = \frac{\sqrt{55}}{8}$

7
 $\tan(\theta) \rightarrow$ positive
 —
 Solve for cosine from sine using trig identities

Solve:

$$\sin(\theta) = \frac{4}{7}$$

$$\cos(\theta) = ?$$

A	B
$\cos(\theta) = \frac{\sqrt{33}}{7}$	$\cos(\theta) = \frac{\sqrt{3}}{7}$

8
 $\tan(\gamma) \rightarrow$ negative
 —
 Solve for cosine from sine using trig identities

Solve:

$$\sin(\gamma) = \frac{4}{8}$$

$$\cos(\gamma) = ?$$

A	B
$\cos(\gamma) = -\frac{\sqrt{3}}{2}$	$\cos(\gamma) = -\frac{2\sqrt{3}}{2}$