



## Trigonometry Identities - Pythagorean Problem Csc to Cot (with Identity, Quadrant as Degrees)

1

Using:

$$\csc^2(\gamma) = \cot^2(\gamma) + 1 \quad \text{Solve for cotangent from cosecant using trig identities}$$

$$180^\circ < \gamma < 270^\circ$$

Solve:

$$\csc(\gamma) = -6$$

$$\cot(\gamma) = ?$$

A	B
$\cot(\gamma) = \sqrt{35}$	$\cot(\gamma) = -\sqrt{35}$

Using:

$$\csc^2(\theta) = \cot^2(\theta) + 1 \quad \text{Solve for cotangent from cosecant using trig identities}$$

$$0^\circ < \theta < 90^\circ$$

Solve:

$$\csc(\theta) = 7$$

$$\cot(\theta) = ?$$

A	B
$\cot(\theta) = 2\sqrt{21}$	$\cot(\theta) = 4\sqrt{3}$

3

Using:

$$\csc^2(\theta) = \cot^2(\theta) + 1 \quad \text{Solve for cotangent from cosecant using trig identities}$$

$$180^\circ < \theta < 270^\circ$$

Solve:

$$\csc(\theta) = -7$$

$$\cot(\theta) = ?$$

A	B
$\cot(\theta) = 2\sqrt{7}$	$\cot(\theta) = 4\sqrt{3}$

4

Using:

$$\csc^2(\theta) = \cot^2(\theta) + 1 \quad \text{Solve for cotangent from cosecant using trig identities}$$

$$0^\circ < \theta < 90^\circ$$

Solve:

$$\csc(\theta) = 4$$

$$\cot(\theta) = ?$$

A	B
$\cot(\theta) = 3\sqrt{2}$	$\cot(\theta) = \sqrt{15}$

5

Using:

$$\csc^2(\beta) = \cot^2(\beta) + 1 \quad \text{Solve for cotangent from cosecant using trig identities}$$

$$270^\circ < \beta < 360^\circ$$

Solve:

$$\csc(\beta) = -7$$

$$\cot(\beta) = ?$$

A	B
$\cot(\beta) = -4\sqrt{3}$	$\cot(\beta) = -\frac{4\sqrt{3}}{2\sqrt{2}}$

6

Using:

$$\csc^2(\theta) = \cot^2(\theta) + 1 \quad \text{Solve for cotangent from cosecant using trig identities}$$

$$270^\circ < \theta < 360^\circ$$

Solve:

$$\csc(\theta) = -4$$

$$\cot(\theta) = ?$$

A	B
$\cot(\theta) = -2\sqrt{5}$	$\cot(\theta) = -\sqrt{15}$

7

Using:

$$\csc^2(\gamma) = \cot^2(\gamma) + 1 \quad \text{Solve for cotangent from cosecant using trig identities}$$

$$180^\circ < \gamma < 270^\circ$$

Solve:

$$\csc(\gamma) = -8$$

$$\cot(\gamma) = ?$$

A	B
$\cot(\gamma) = \sqrt{55}$	$\cot(\gamma) = 3\sqrt{7}$

8

Using:

$$\csc^2(\beta) = \cot^2(\beta) + 1 \quad \text{Solve for cotangent from cosecant using trig identities}$$

$$90^\circ < \beta < 180^\circ$$

Solve:

$$\csc(\beta) = 4$$

$$\cot(\beta) = ?$$

A	B
$\cot(\beta) = -\sqrt{15}$	$\cot(\beta) = \sqrt{15}$