



Trigonometry Identities - Pythagorean Problem Tan to Sec (without Identity, Quadrant as Degrees)

¹ $0^\circ < \gamma < 90^\circ$
—

Solve for secant from tangent using trig identities

Solve:

$$\tan(\gamma) = 17$$
$$\sec(\gamma) = ?$$

A	B
$\sec(\gamma) = \sqrt{281}$	$\sec(\gamma) = \sqrt{290}$

² $0^\circ < \alpha < 90^\circ$
—

Solve for secant from tangent using trig identities

Solve:

$$\tan(\alpha) = 13$$
$$\sec(\alpha) = ?$$

A	B
$\sec(\alpha) = \sqrt{165}$	$\sec(\alpha) = \sqrt{170}$

³ $270^\circ < \gamma < 360^\circ$
—

Solve for secant from tangent using trig identities

Solve:

$$\tan(\gamma) = -6$$
$$\sec(\gamma) = ?$$

A	B
$\sec(\gamma) = \sqrt{37}$	$\sec(\gamma) = \sqrt{55}$

⁴ $0^\circ < \theta < 90^\circ$
—

Solve for secant from tangent using trig identities

Solve:

$$\tan(\theta) = 6$$
$$\sec(\theta) = ?$$

A	B
$\sec(\theta) = \sqrt{37}$	$\sec(\theta) = \frac{\sqrt{37}}{\sqrt{5}}$

⁵ $0^\circ < \gamma < 90^\circ$
—

Solve for secant from tangent using trig identities

Solve:

$$\tan(\gamma) = 7$$
$$\sec(\gamma) = ?$$

A	B
$\sec(\gamma) = 5\sqrt{2}$	$\sec(\gamma) = -5\sqrt{2}$

⁶ $270^\circ < \theta < 360^\circ$
—

Solve for secant from tangent using trig identities

Solve:

$$\tan(\theta) = -8$$
$$\sec(\theta) = ?$$

A	B
$\sec(\theta) = \sqrt{65}$	$\sec(\theta) = \frac{\sqrt{65}}{2}$

⁷ $0^\circ < \gamma < 90^\circ$
—

Solve for secant from tangent using trig identities

Solve:

$$\tan(\gamma) = 9$$
$$\sec(\gamma) = ?$$

A	B
$\sec(\gamma) = -\sqrt{82}$	$\sec(\gamma) = \sqrt{82}$

⁸ $90^\circ < \gamma < 180^\circ$
—

Solve for secant from tangent using trig identities

Solve:

$$\tan(\gamma) = -5$$
$$\sec(\gamma) = ?$$

A	B
$\sec(\gamma) = \sqrt{26}$	$\sec(\gamma) = -\sqrt{26}$