



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

1 $\pi < \beta < \frac{3\pi}{2}$
—
Solve for secant from tangent using trig identities

A	B
$\sec(\beta) = -8\sqrt{2}$	$\sec(\beta) = -\sqrt{101}$

Solve:
 $\tan(\beta) = 10$
 $\sec(\beta) = ?$

2 $\frac{3\pi}{2} < \alpha < 2\pi$
—
Solve for secant from tangent using trig identities

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

Solve:
 $\tan(\alpha) = -5$
 $\sec(\alpha) = ?$

3 $\pi < \alpha < \frac{3\pi}{2}$
—
Solve for secant from tangent using trig identities

A	B
$\sec(\alpha) = -\sqrt{197}$	$\sec(\alpha) = -\sqrt{215}$

Solve:
 $\tan(\alpha) = 14$
 $\sec(\alpha) = ?$

4 $\pi < \beta < \frac{3\pi}{2}$
—
Solve for secant from tangent using trig identities

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

Solve:
 $\tan(\beta) = 7$
 $\sec(\beta) = ?$

5 $\frac{3\pi}{2} < \theta < 2\pi$
—
Solve for secant from tangent using trig identities

A	B
$\sec(\theta) = \sqrt{203}$	$\sec(\theta) = \sqrt{197}$

Solve:
 $\tan(\theta) = -14$
 $\sec(\theta) = ?$

6 $\frac{3\pi}{2} < \alpha < 2\pi$
—
Solve for secant from tangent using trig identities

A	B
$\sec(\alpha) = \sqrt{145}$	$\sec(\alpha) = 3\sqrt{17}$

Solve:
 $\tan(\alpha) = -12$
 $\sec(\alpha) = ?$

7 $\frac{\pi}{2} < \beta < \pi$
—
Solve for secant from tangent using trig identities

A	B
$\sec(\beta) = -3$	$\sec(\beta) = -\sqrt{5}$

Solve:
 $\tan(\beta) = -2$
 $\sec(\beta) = ?$

8 $\pi < \theta < \frac{3\pi}{2}$
—
Solve for secant from tangent using trig identities

A	B
$\sec(\theta) = -\frac{\sqrt{82}}{2}$	$\sec(\theta) = -\sqrt{82}$

Solve:
 $\tan(\theta) = 9$
 $\sec(\theta) = ?$