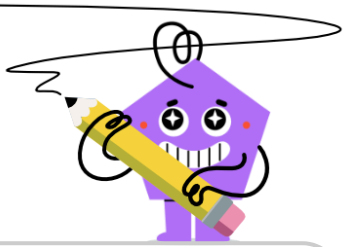
Name



Trigonometry Identities - Pythagorean Problem Tan to Sec (with Identity, Quadrant as Degrees)

1

Using:
$\tan^2(\alpha) = \sec^2(\alpha) - 1$
$0^\circ < \alpha < 90^\circ$

Solve for secant from tangent using trig identities

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

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

2

Using:
$\tan^2(\alpha) = \sec^2(\alpha) - 1$
$180^\circ < \alpha < 270^\circ$

Solve for secant from tangent using trig identities

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

A	B
$\sec(\alpha) = -\sqrt{170}$	$\sec(\alpha) = -\sqrt{130}$

3

Using:
$\tan^2(\gamma) = \sec^2(\gamma) - 1$
$0^\circ < \gamma < 90^\circ$

Solve for secant from tangent using trig identities

Solve:
$\tan(\gamma) = 13$
$\sec(\gamma) = ?$

A	B
$\sec(\gamma) = \sqrt{145}$	$\sec(\gamma) = \sqrt{170}$

4

Using:
$\tan^2(\theta) = \sec^2(\theta) - 1$
$180^\circ < \theta < 270^\circ$

Solve for secant from tangent using trig identities

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

A	B
$\sec(\theta) = -\frac{\sqrt{197}}{\sqrt{3}}$	$\sec(\theta) = -\sqrt{197}$

5

Using:
$\tan^2(\theta) = \sec^2(\theta) - 1$
$180^\circ < \theta < 270^\circ$

Solve for secant from tangent using trig identities

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

A	B
$\sec(\theta) = -\sqrt{71}$	$\sec(\theta) = -\sqrt{101}$

6

Using:
$\tan^2(\beta) = \sec^2(\beta) - 1$
$0^\circ < \beta < 90^\circ$

Solve for secant from tangent using trig identities

Solve:
$\tan(\beta) = 15$
$\sec(\beta) = ?$

A	B
$\sec(\beta) = \sqrt{226}$	$\sec(\beta) = -\sqrt{226}$

7

Using:
$\tan^2(\beta) = \sec^2(\beta) - 1$
$270^\circ < \beta < 360^\circ$

Solve for secant from tangent using trig identities

Solve:
$\tan(\beta) = -19$
$\sec(\beta) = ?$

A	B
$\sec(\beta) = \frac{\sqrt{362}}{\sqrt{5}}$	$\sec(\beta) = \sqrt{362}$

8

Using:
$\tan^2(\beta) = \sec^2(\beta) - 1$
$90^\circ < \beta < 180^\circ$

Solve for secant from tangent using trig identities

Solve:
$\tan(\beta) = -4$
$\sec(\beta) = ?$

A	B
$\sec(\beta) = \sqrt{17}$	$\sec(\beta) = -\sqrt{17}$