

Trigonometry Worksheet: Graph Trigonometric Functions (7)

Graph the trigonometric function given by

$$y = -2\sec(3x)$$

The period of the secant is 2π ; one cycle is found by solving $0 < 3x < 2\pi \Rightarrow 0 < x < \frac{2\pi}{3}$

Note: We use $\sec(3x) = \frac{1}{\cos(3x)}$

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|---------------------------------|------|-----------------|-----------------|------------------|------------------|
| $3x$ | 0 | $\frac{\pi}{2}$ | π | $\frac{3\pi}{2}$ | 2π |
| $\cos(3x)$ | 1 | 0 | -1 | 0 | 1 |
| $\sec(3x) = \frac{1}{\cos(3x)}$ | 1 | U | -1 | U | 1 |
| x | 0 | $\frac{\pi}{6}$ | $\frac{\pi}{3}$ | $\frac{\pi}{2}$ | $\frac{2\pi}{3}$ |
| y | -2 | U | 2 | U | -2 |

(V.A)
(V.A)

$U =$ undefined

V.A = Vertical asymptote

