
Common Trigonometry Mistakes

Example: Value of a Trigonometric Function

The Goal

Find the exact value of:

$$\sec\left(\frac{5\pi}{6}\right)$$

The Mistake

Find the mistake:

$$\sec\left(\frac{5\pi}{6}\right) = \frac{1}{\sin\left(\frac{5\pi}{6}\right)} = \frac{1}{\frac{1}{2}} = 2$$

Need a hint? Look carefully at the red part:

$$\sec\left(\frac{5\pi}{6}\right) = \frac{1}{\sin\left(\frac{5\pi}{6}\right)} = \frac{1}{\frac{1}{2}} = 2$$

The Correction

$$\sec\left(\frac{5\pi}{6}\right) = \frac{1}{\cos\left(\frac{5\pi}{6}\right)} = \frac{1}{-\frac{\sqrt{3}}{2}} = -\frac{2}{\sqrt{3}} = -\frac{2\sqrt{3}}{3}$$

An Explanation

The secant function is the reciprocal of the cosine function, not the sine function.