Common Trigonometry Mistakes

Example: Value of inverse sine

The Goal

Find

$$\sin^{-1}\left(\frac{1}{2}\right)$$

The Mistake

Find the mistake:

$$\sin^{-1}\left(\frac{1}{2}\right) = 30$$

Need a hint? Look carefully at the red part:

$$\sin^{-1}\left(\frac{1}{2}\right) = 30$$

The Correction

$$\sin^{-1}\left(\frac{1}{2}\right) = \frac{\pi}{6}$$

An Explanation

The inverse trigonometric functions are most usefully defined with the range in *radian* measure. Doing so makes calculus formulas (derivatives and integrals) simpler.
If degree measure is to be used, then the value of the inverse trigonometric function must clearly indicate that choice by giving (in this example) the answer as 30°.

Using a calculator with the angle mode set to "degrees" may have been the source of the mistake. Students should learn the values of the inverse trigonometric functions at nice values - visit Trigonometric Facts to help learn these values.

<-- Back