
Common Calculus Mistakes

Example: Hyperbolic Sine

The Goal

Find

$$\frac{d}{dx}(1 + \sinh x)$$

The Mistake

Find the mistake:

$$\frac{d}{dx}(1 + \sinh x) = \frac{1}{\sqrt{1+x^2}}$$

Need a hint? Look carefully at the red part:

$$\frac{d}{dx}(1 + \sinh x) = \frac{1}{\sqrt{1+x^2}}$$

The Correction

$$\frac{d}{dx}(1 + \sinh x) = \cosh x$$

An Explanation

The student used the incorrect derivative formula (the answer given happens to be the correct derivative for *inverse* hyperbolic sine).