

Instructions: This quiz is closed book, closed note, and an individual effort. Electronic devices are not allowed on your person (this includes calculators). Answer each question. Show all work to receive full credit.

1. (5 pts) Find an equivalent algebraic expression for:

$$\csc(\sin^{-1}(x))$$

Solution: Let $\theta := \sin^{-1}(x)$. So $\sin(\theta) = x$. So $\csc(\theta) = \frac{1}{\sin(\theta)} = \frac{1}{x}$.

Remark: A number of folks are confusing \sin^{-1} (or arcsin) with \csc . These are **different** functions. $\csc(\theta) = \frac{1}{\sin(\theta)}$, while $\sin^{-1}(x)$ gives us the angle θ such that $\sin(\theta) = x$.

2. (5 pts) Verify the following identity:

$$-2 \cot^2(x) = \frac{1}{1 - \sec(x)} + \frac{1}{1 + \sec(x)}$$

Solution: See the Section 6.2 worksheet solutions for Problem 12.