Theorem 19. **Derivatives of the Inverse Trigonometric Functions**

1. $\dfrac{d}{dx}\arcsin x = \dfrac{1}{\sqrt{1-x^2}}$, $\|x\| < 1$	2. $\dfrac{d}{dx}\arccos x = -\dfrac{1}{\sqrt{1-x^2}}$, $\|x\| < 1$
3. $\dfrac{d}{dx}\arctan x = \dfrac{1}{1+x^2}$, $x \in \mathbb{R}$	4. $\dfrac{d}{dx}\text{arccot}(x) = -\dfrac{1}{1+x^2}$, $x \in \mathbb{R}$
5. $\dfrac{d}{dx}\text{arcsec}(x) = \dfrac{1}{\|x\|\sqrt{x^2-1}}$, $\|x\| > 1$	6. $\dfrac{d}{dx}\text{arccsc}(x) = -\dfrac{1}{\|x\|\sqrt{x^2-1}}$, $\|x\| > 1$