Vocabulary/Definitions

- \( \frac{d}{dx} \ln(x) = \)  
- \( \frac{d}{dx} \arctan(x) = \)  
- \( \frac{d}{dx} \arcsin(x) = \)  
- \( \frac{d}{dx} f^{-1}(x) = \)

Understand

1. Use the method the book uses to find \( \frac{d}{dx} \arctan(x) \) to find \( \frac{d}{dx} \arccos(x) \). You will want to use the fact that \( \sin(\arccos(x)) = \sqrt{1-x^2} \).

2. Find the derivative of \( g(x) = 3x \ln(\sqrt{x} - 3) \).

3. Find the derivative of \( f(y) = 3 \arctan(3y - e^y) \).