Name: _____ Academic Integrity Signature: _____

I have abided by the UNCG Academic Integrity Policy.

Note: Correct numerical answers without justification will receive little or no credit.

1. (3 points) What is $\dfrac{d}{dx}\left(\cos^{-1}(u)\right)$? (No justification needed.)

   > **Solution:** $\dfrac{-1}{\sqrt{1-u^2}} \cdot \dfrac{du}{dx}$

2. (3 points) What is $\dfrac{d}{dx}\left(\tan^{-1}(u)\right)$? (No justification needed.)

   > **Solution:** $\dfrac{1}{1+u^2} \cdot \dfrac{du}{dx}$

3. (4 points) Complete the statement of *The Extreme Value Theorem.*

   If f is [   ] on a closed interval $[a, b]$, then ...

   > **Solution:** If f is [continuous] on a closed interval $[a, b]$, then f attains an absolute maximum and an absolute minimum on $[a, b]$.