1. Explain why \( \frac{d}{dx} \arccos x = \frac{-1}{\sqrt{1-x^2}} \) using the calculus rule \( \frac{d}{dx} f^{-1}(x) = \frac{1}{f'(f^{-1}(x))} \) for differentiating the inverse function and trigonometry.

2. Find the following derivatives using the rules of calculus:
   (i) \( \frac{d}{dx} \sqrt{x^2 + 1} \)
   (ii) \( \frac{d}{dx} \ln(\cos 2x) \)