1.) (4 pts.) Compute $f'(x)$ if $f(x) = \sqrt{1 + x^2}$.

2.) (4 pts.) Compute the derivative of both sides of the expression

$$x \sin y = \ln(\ln y).$$

Do not go further. In particular, do not solve for $\frac{dy}{dx}$.

3.) (2 pts.) What is $\cos \frac{\pi}{6}$? (Your answer should be a number.)