1.) (4 pts.) Determine whether $G(x) = xe^x$ is an antiderivative of $g(x) = (x + 1)e^x$. (Remember: showing your work and thought process is particularly important in these types of exercises.)

2.) (4 pts.) Compute $f'(x)$ for $f(x) = \ln(4x^2 + 3)$. Do not simplify your result.

3.) (2 pts.) The figure below is a $30^\circ - 60^\circ - 90^\circ$ triangle with hypotenuse of length 2. What are the lengths of the other two sides?