1. (3 points) Let \( y = \tan(x \sec(2x)) \). Compute \( y' \).

2. (3 points) An arrow is shot upward and falls back down. Its height is given by \( h(t) = t(10 - kt) \). It achieves its maximum height at \( t = 5 \) seconds. What is \( k \)?
3. (4 points) Let

\[ y = \left( \frac{2x + 1}{\cos x} + 2 \sin x \right)^{1/3} \]

Find \( y' \).