Local Linearization

Consider $f(x) = 1/x$.

1. Find the local linearization (aka tangent line approximation) to $f(x)$ at $x = 1$.

2. Use your approximation to estimate $f(1.1)$.

3. Make a very rough sketch $f(x)$ near $x = 1$.

4. Is your estimate too high or too low? Use a graph of $f(x)$ to support your reasoning.