1. Find an equation of the tangent line to the curve $y = \dfrac{2x+1}{x+2}$ at $(1,1)$?

2. Evaluate the limit if it exists. If it does not exist, explain why: $\displaystyle\lim_{x \to \infty} \dfrac{\sqrt{9x^6 - x}}{x^3 + 1}$

3. Show that the equation $\ln x = 3 - 2x$ has at least one real root.

4. Prove $\lim\limits_{x \to 4}(2x - 5) = 3$ using the $\epsilon - \delta$ definition of a limit?