Q1]...[3 points] Find the average rate of change of \( f(x) = \cot x \) on the interval \( \left[ \frac{\pi}{6}, \frac{\pi}{2} \right] \).

Q2]...[3 points] Evaluate \( \lim_{t \to 1} \frac{t-1}{\sqrt{t+3}-2} \).
Q3]...[4 points] For the limit \( \lim_{x \to 4} \frac{1}{x} = \frac{1}{4} \), find a \( \delta > 0 \) that works for \( \epsilon = 0.05 \).