Sooner Upward Bound Calculus: Understanding Derivatives

Problem 1: Explain the differences between average rate of change and instantaneous rate of change.

Problem 2: How does your explanation above relate to the difference between secant lines and tangent lines?
**Problem 3:** Explain the derivation of the difference quotient as the formula for the slope of a secant line. Use the graph below to aid your explanation.

**Problem 4:** Explain the derivation of the limit definition of the derivative as the formula for the slope of the tangent line. Again, use the graph below to aid your explanation.