Algebra -- Projects

Navigate to *MrHonner.com/NYSMTPScratch* and click on the *Algebra Projects* link. You will find a program that asks for a and returns f(a) for a hard-coded function f(x).

Your challenge is to modify the existing program so that it performs a task below.

Level 1	Ask user for *a* and *b* values. Return the average rate of change of $f(x)$ on $[a,b]$.
Level 2	Ask user for the value *a*. Determine if $f(x)$ is increasing or decreasing around *a*.
Level 3	Ask the user for *a* and *b* values. Determine the maximum value of $f(x)$ on $[a,b]$
Challenge	Ask user for a value *a*. Estimate the second derivative of $f(x)$ at *a*.