Homework 3 Due: Tue, Feb 17, 2004

1. (10 points) Show that the derivative of f(x) may be approximated as

$$C_h = \frac{f(a+h) - f(a-h)}{2h},$$

such that  $C_h$  satisfies:

$$|C_h - f'(a)| \leq \frac{h^2}{6}M_3$$

if

$$|f'''(x)| \leq M_3$$
 for all  $x$ .

2. (0 points) Read Section 1.5 from the textbook. The next question requires this reading.

3. (10 points) Do P.1.5.1 from textbook.