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

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

such that $C_{h}$ satisfies:

$$
\left|C_{h}-f^{\prime}(a)\right| \leq \frac{h^{2}}{6} M_{3}
$$

if

$$
\left|f^{\prime \prime \prime}(x)\right| \leq M_{3} \quad \text { for all } x .
$$

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.
