Homework #2 (due 10/16/2001)

- Questions 5.1, 5.5, 5.10
- Exercises 5.1 (no need to implement), 5.2, 5.8 (look at eq. 5.12)
- If an energy functional contains the term $\int (f'(x))^2 dx$, show that the corresponding Euler-Lagrange equation has the term $-f''(x)$. If the energy functional is discretized to $E = \sum_i (f_i - f_{i+1})^2$ what is the corresponding gradient of the energy seen at each f_i ? Is it the same as that obtained by discretizing the Euler-Lagrange equation above?