Homework No 4. Due October 1-st.

1. Find a first term expansion of the solution of each of the following:

1. $\varepsilon y'' = -(x^2 - \frac{1}{4})y'$ for $0 < x < 1$, where $y(0) = 1$ and $y(1) = -1$

f) $\varepsilon y'' + y(y' + 3) = 0$ for $0 < x < 1$ where $y(0) = -1$ and $y(1) = 1$

2. Complete proof of problem presented in class.