Names of all group members: *Recitation section:*

Pledge and Signatures:

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1.   (a) Using a graph, explain why the following equation has a solution at $x = 0$ and another just to the right of $x = 0$:
$$\cos x = 1 - 0.1x.$$

(b) Replace $\cos x$ by its second-degree Taylor polynomial near 0 and solve the equation. Your answers are approximate solutions to the original equation near $x = 0$.

2. Using Taylor polynomials, find a rational number q such that
$$|q - \sqrt{11}| < 10^{-3}.$$

You must use the Lagrange error bound to show that the error is less than 10^{-3}.