1. Use Newton's method to find the positive fourth root of 2 by solving the equation $x^4 = 2$. If you start with $x_0 = 1$ to find x_1 and x_2, then $x_1 - x_2 =$

2. Evaluate the following limits (if exist)

a. $\lim\limits_{x \to \infty} \left(\frac{x+2}{x-1} \right)^x$

3. If 1200 m² of material is used to construct a rectangular box with a square base and an open top, then the largest possible volume of the box is