Problem 2-1.

Consider the function:
- trigonometric function \( f(x) = \cos(x) \)
- polynomial \( f(x) = 3x^3 + 4x^2 + 1 \)

a) evaluate numerically first order derivatives at point \( x_0 = 1 \) using 2 different finite difference formulas

b) evaluate numerically second order derivatives at point \( x_0 = 2 \) using 2 different finite difference formulas

Results for various \( \Delta x \) compare with exact solution

*Finite difference formulas other than given on the lecture find in the numerical methods book*

Good Luck 😊

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