

Root Finding: Fixed Points of an Ordinary Differential Equation **(ODE)**

Consider the first-order ODE:

$$\frac{dx}{dt} = e^x - \cos(x)$$

Find all of the ODE's fixed points from -5 to 5.

- a) Graphically
- b) Using the Newton-Raphson Method. Supply your own initial guesses, but iterate until either the percent relative error falls under 0.0001% or the number of iterations exceeds 50.