SIF3012 Computational Physics
2025-2026 Semester 1
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BLOCK 2

Exercise 1
Consider the ordinary differential equation $y'' + xy' - xy = 2x$ with boundary conditions $y(0) = 1$ and $y(2) = 8$. Convert this 2nd order ODE into two 1st order ODEs and write a code that applies the shooting method with steps h=0.1 to solve for $y(x)$.

Exercise 2
Plot the solution you obtained in Exercise (1).