

1. Consider the initial value problem $y'(x) = 2y(x) - x + 1$, $y(0) = -1$.
 - a. Use Euler's method with stepsize 0.5 to approximate $y(1)$.
 - b. Use the second degree Taylor method with stepsize 0.5 to approximate $y(1)$.
2. Use two iterations of the inverse power method to approximate the smallest absolute value eigenvalue of

$$A = \begin{pmatrix} 1 & 1 \\ 3 & 2 \end{pmatrix}.$$

Use the initial guess $(1, 1)$.