Newton's Method

If \( x_n \) is an approximation of a solution of \( f(x) = 0 \) and if \( f'(x_n) \neq 0 \), the next approximation is given by

\[
x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}.
\]

Use two or more iterations of Newton's Method to determine an approximation to the solution to each equation

1. \( \frac{1}{2}x^3 + x^2 + 1 = 0 \)

2. \( e^{2-0.5x} = 2 \)

Use two or more iterations of Newton's Method to determine an approximate solution that lies in the given interval.

3. \( \cos x = x \) on the interval \([0, 2]\)