Section 3, Exercise 1

Let $\frac{dx}{dt} = \cos(t)$, $x(1) = 0.8415$.

1. Write a program to find $x(2)$ to three significant figures using Euler's method with $h = 1$.

2. Write a program to find $x(2)$ to three significant figures using Euler's method with $h = 0.5$. (You'll have to do two steps.)

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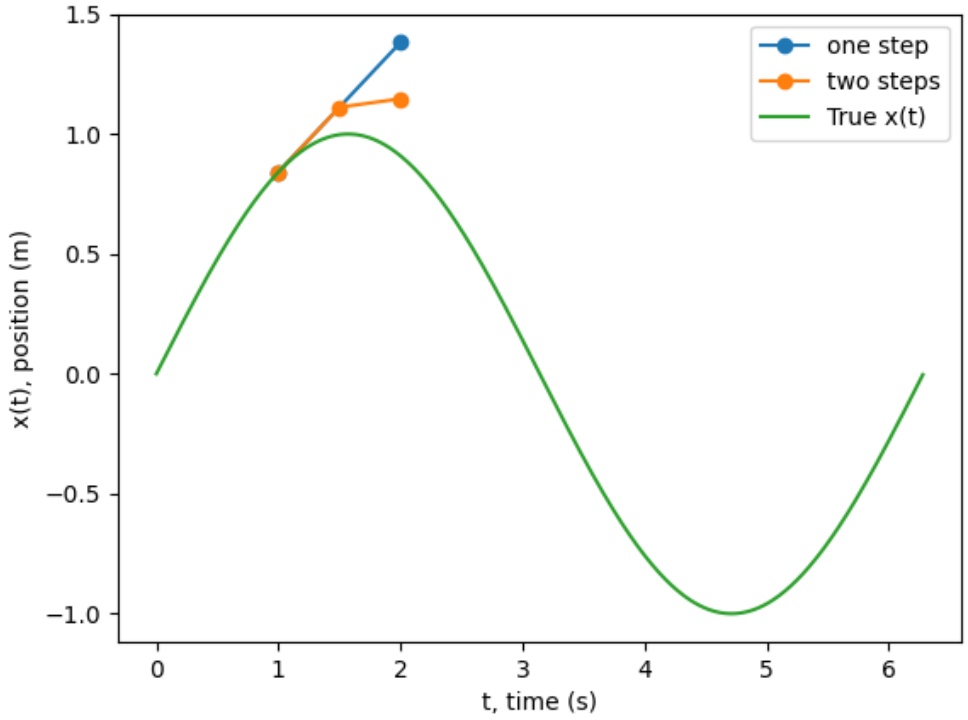

1 step, h=1:
1.3818023058681397

2 steps, h=0.5:
1.1470197537679214

Section 3, Exercise 2

Let $\frac{dx}{dt} = e^{-2t}$, $x(0) = 10$. Write a program that uses a change of variable and Euler's method with 1000 steps to plot the solution for $x(t)$ vs t.

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