

HW3

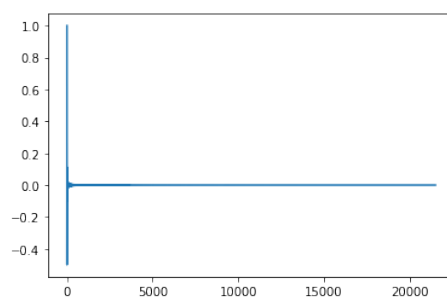
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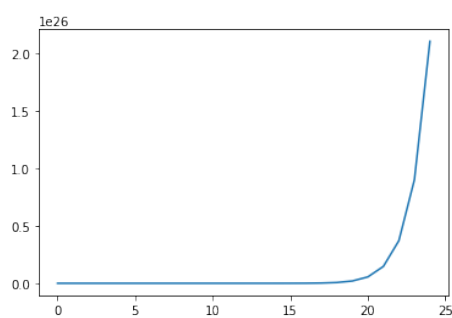
Question 1

$$x = \begin{bmatrix} -2.0 \\ 3.5 \end{bmatrix}$$

Question 2



Question 3



Question 4

since we have $x_{i+1} - x_i = h$, thus $x_i + x_{i+1} = x_i + x_i + h$, then we can rewrite the summation function see in github

Question 5

$$\frac{d}{dx} = \left(x^3 + 3.66666666666667x^2 - 1 - \frac{\cos^2(\pi x)}{2x^2 + 1} \right)$$