Homework 2.1

You get two attempts to solve this problem. The first submission will be graded out of 0 points and feedback on writing style will be provided. The second submission will be due with Homework 2.

1. (15 points) Let $G_n \colon \{0,1\}^n \to \{0,1\}^{n+1}$ be a PRG. Consider the function $H_n \colon \{0,1\}^n \to \{0,1\}^{n+\ell}$ defined as follows:

$$H_n(x) := G_{n+\ell-1}\left(G_{n+\ell-2}\left(\cdots G_n(x)\cdots\right)\right)$$

   If ℓ is polynomial in n, then prove that H_n is a PRG.