Exercises Week4

- 1. Compute the convolution of the two sequences $x_1=...0,0,1,2,\frac{1}{1},3,1,4,0,0,...$ and $x_2=...0,0,3,\frac{2}{1},1,0,0,...$, in two ways:
 - a. in the time domain
 - b. using the Z transform
- 2. Find the Z transform of the following signals

a.

$$x[n] = \begin{cases} \left(\frac{1}{3}\right)^n, & n \ge 0\\ \left(\frac{1}{2}\right)^{-n}, & n < 0 \end{cases}$$

b.

$$x[n] = \left(\frac{1}{2}\right)^n \sin(\frac{\pi}{3}n) u[n]$$