

Exercises Week 7

DSP

1. Find the Z transform of the following signal

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

2. Find all the signals $x[n]$ which have the Z transform

$$X(z) = \frac{7}{(1 - 2z^{-1})(1 + 0.5z^{-1})}$$