1. let a transform function of a signal be $\frac{1}{1-0.5z^{-1}}$ and it's known that the signal is stable. Find the signal.

$$F(z) = \frac{1}{1-0.5z^{-1}}, \quad |z| > \frac{1}{2}$$

$$\Rightarrow f[n] = \left(\frac{1}{2}\right)^n u[n]$$

2. let a transform function of a signal be $\frac{1}{0.5-z^{-1}}$ and it's known that the signal is stable. Find the signal.

$$F(z) = \frac{1}{0.5-z^{-1}}, \quad |z| < 2$$

$$= 2 \cdot \frac{1}{1-2z^{-1}}$$

$$\Rightarrow f[n] = -2^{n+1} u[-n-1]$$