

Z transform

1-
$$H(z) = \frac{z+1}{z^2 - 0.9z + 0.81}$$

- Generate transfer function.
- Find the frequency response of system.
- Find step response of system.
- Check stability of system use two different Methods.
- Find impulse response use two different Methods.

2-

A causal LTI system is described by the following difference equation:

$$y(n) = 0.81y(n-2) + x(n) - x(n-2)$$

- Determine the system function $H(z)$.
- the unit impulse response $h(n)$.
- the unit step response $s(n)$.
- Plot zeros and poles of this system.
- the frequency response function $H(e^{j\omega})$, and plot its magnitude and phase response.