

$$H(z) = \frac{b_0 z^0 + b_1 z^{-1} + b_2 z^{-2}}{1 - (a_1 z^{-1} + a_2 z^{-2})}$$

$$= \frac{z^2}{z^2} \cdot H(z) = \frac{b_0 z^2 + b_1 z + b_2 z^0}{z^2 - (a_1 z + a_2 z^0)}$$

$$= \frac{b_0 z^2 + b_1 z + b_2}{z^2 - a_1 z - a_2}$$

$$= \frac{G(z - z_1)(z - z_2)}{(z - p_1)(z - p_2)}$$

$z_1, z_2$  are zeros of  $H(z)$

$p_1, p_2$  are poles of  $H(z)$

$$H(p_i) = \infty$$