

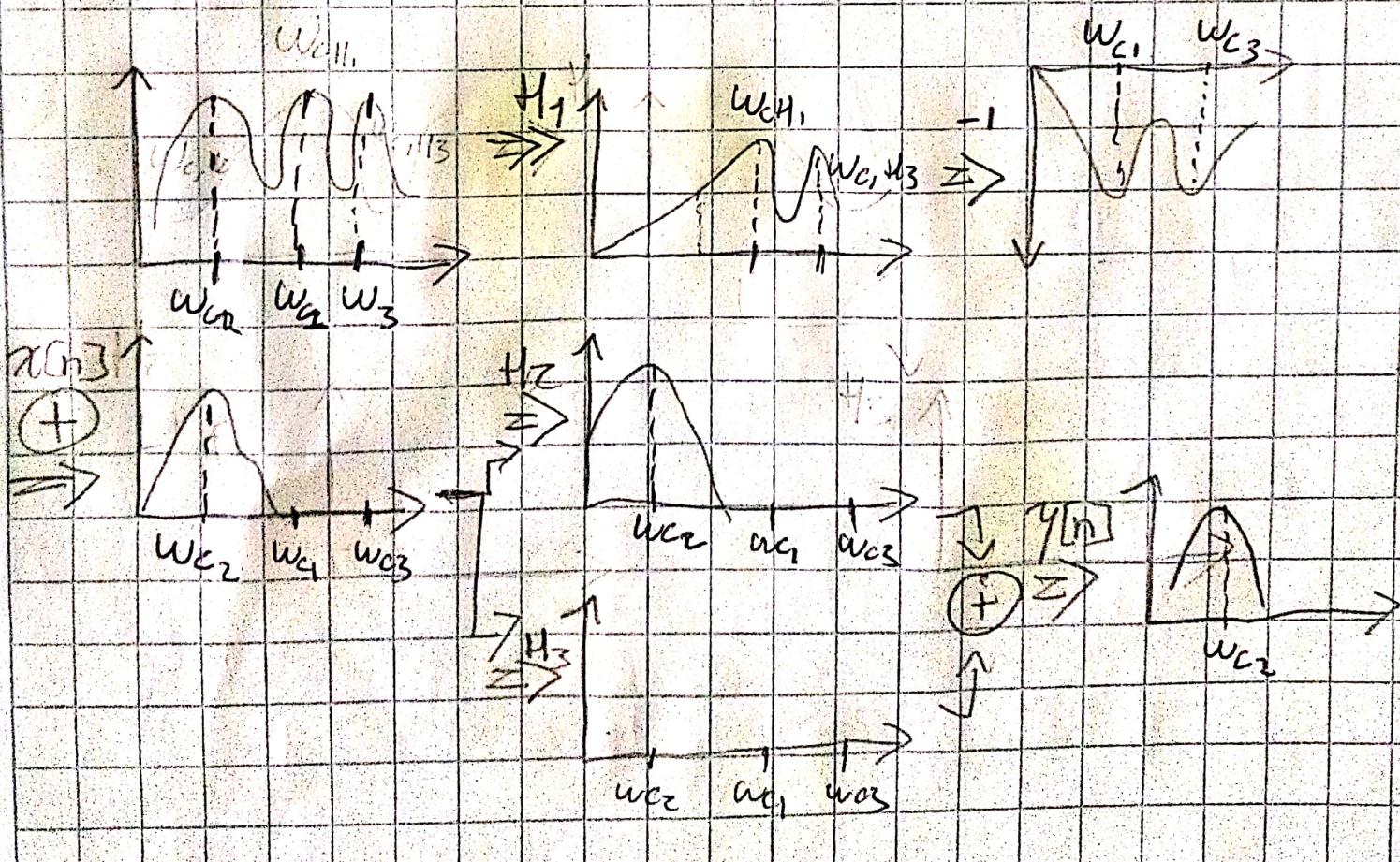
$$\text{diuma LPF} \Rightarrow \frac{0.4 + 0.6z^{-1}}{1 + 0.6z^{-1}} = H_2$$

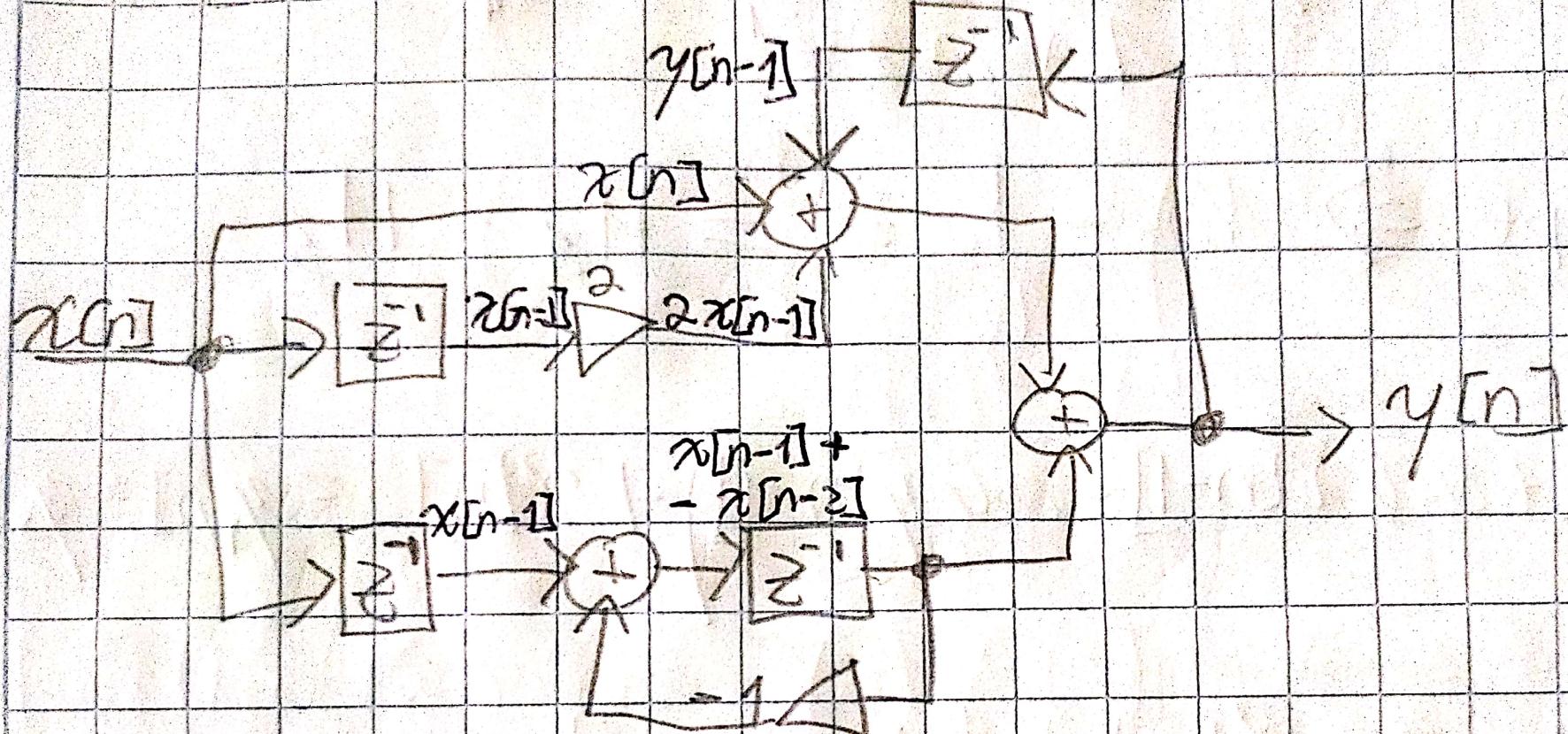
$$H_{\text{PF}} \Rightarrow Y_2 - Y_2 z^{-1} = H_1 = H_3$$

$$-(0.4x[n] + 0.6x[n-1]) - 0.6y[n-1] + x[n] = y_1[n] =$$

$$Y_2[n] = 0.5x[n] - 0.5x[n-1]$$

$$Y_3[n] = 0.4x[n] + 0.6x[n-1] - 0.6y[n-1]$$





$$\Rightarrow x[n] + 2x[n-1] + y[n-1] + /x[n-1] - x[n-2]$$

$$\Rightarrow x[n] + 3x[n-1] - x[n-2] + y[n-1]$$

$$\omega_1 = 0.25\pi \text{ rad/s} \quad \omega_2 = 0.75\pi \text{ rad/s}$$

$$A_1 = 10 \quad A_2 = 5$$

Por polo y ceros

$$H(z) = \frac{(z - e^{j0.25\pi})(z - e^{-j0.25\pi})}{(z - e^{j0.75\pi})(z - e^{-j0.75\pi})} \quad \alpha = 0.9$$

$$H(z) = \frac{(z - e^{j0.25\pi})(z - e^{-j0.25\pi})}{(z - e^{j0.75\pi})(z - e^{-j0.75\pi})} \cdot \frac{(z - e^{j0.75\pi})(z - e^{-j0.75\pi})}{(z - e^{j0.25\pi})(z - e^{-j0.25\pi})}$$

DUPA

$$= \frac{(z^2 - 1.414z + 1)(z^2 + 1.414z + 1)}{(z^2 - 1.272z + 0.8)(z^2 + 1.272z + 0.8)}$$

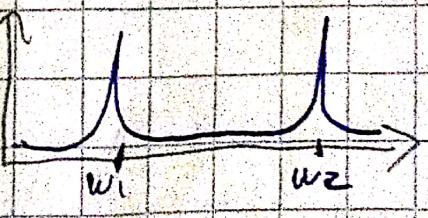
DUPA

$$= \frac{z^4 + 0.00604z^2 + 1}{z^4 + 0.002011z^2 + 0.656} \times \frac{z^4}{z^4}$$

$$\frac{1 + 0.00604z^{-2} + z^{-4}}{1 + 0.002011z^{-2} + 0.656z^{-4}} \rightarrow \begin{array}{c} \uparrow \\ 1 \\ \uparrow \\ w_1 \quad w_2 \end{array}$$

Siendo yo quien lo contrario denominador para a ser numerador y numerador el denominador

$$H(z) = \frac{1 + 0.002011z^{-2} + 0.656z^{-4}}{1 + 0.00604z^{-2} + z^{-4}}$$



$$|H(e^{j0.25\pi})| = 10$$

$$w = 0.25\pi \Rightarrow e^{j0.25\pi} = \cos(0.25\pi) + j\sin(0.25\pi) = \frac{\sqrt{2}}{2} + j\frac{\sqrt{2}}{2}$$

$$w = 0.75\pi \Rightarrow e^{j0.75\pi} = \cos(0.75\pi) + j\sin(0.75\pi) = -\frac{\sqrt{2}}{2} + j\frac{\sqrt{2}}{2}$$

$$H\left(\frac{\sqrt{2}}{2} + j\frac{\sqrt{2}}{2}\right) \geq 10$$

$$\text{DvPa}_{0,0} \quad b_0 = 29.077 - 0.12011j$$