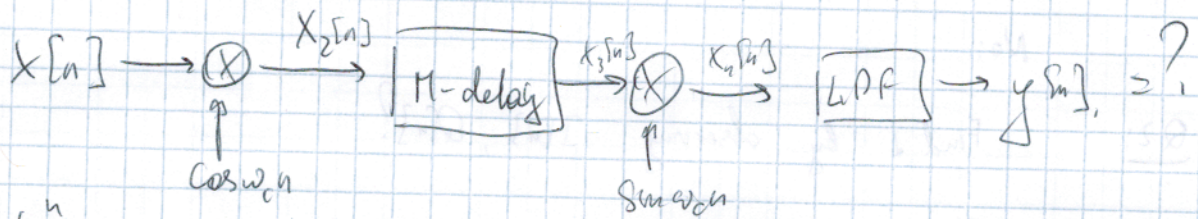


$$\Rightarrow y[n] = \frac{1}{2} \sin \omega_c M \cdot x[n-M].$$



Solⁿ:

$$X_2(\omega) = \frac{1}{2} X(\omega - \omega_c) + \frac{1}{2} X(\omega + \omega_c)$$

$$X_3(\omega) = e^{-j\omega M} X_2(\omega)$$

$$X_4(\omega) = \frac{1}{2j} X_3(\omega - \omega_c) - \frac{1}{2j} X_3(\omega + \omega_c)$$

$$= \frac{\sin \omega_c M}{2} e^{-j\omega M} X(\omega) + \dots \text{high freq terms} \dots$$

$$\Rightarrow Y(\omega) = \frac{\sin \omega_c M}{2} e^{-j\omega M} X(\omega) \Rightarrow$$

$$y[n] = \frac{\sin \omega_c M}{2} x[n-M]$$