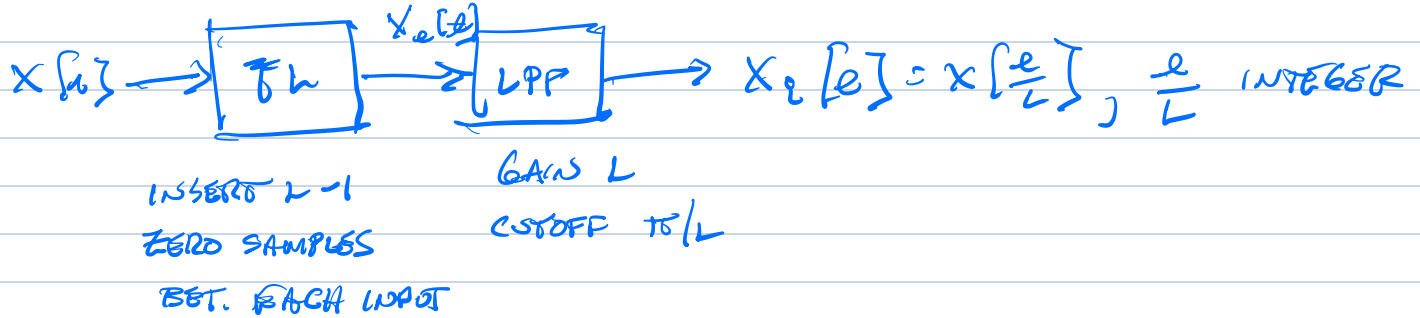


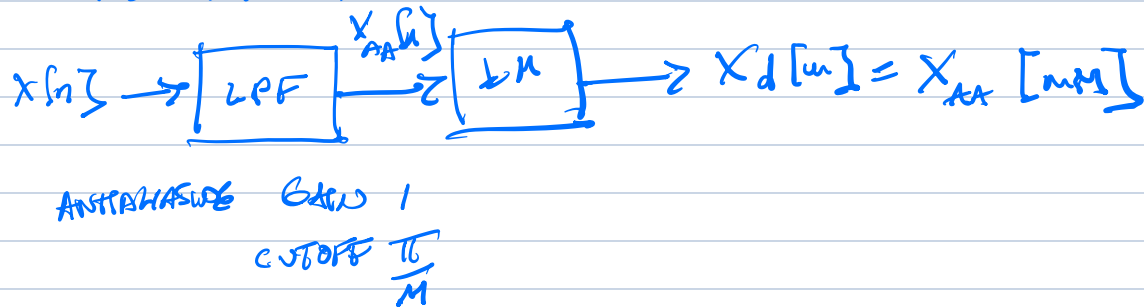
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REVIEW OF DS DECIMATION & INTERPOLATION

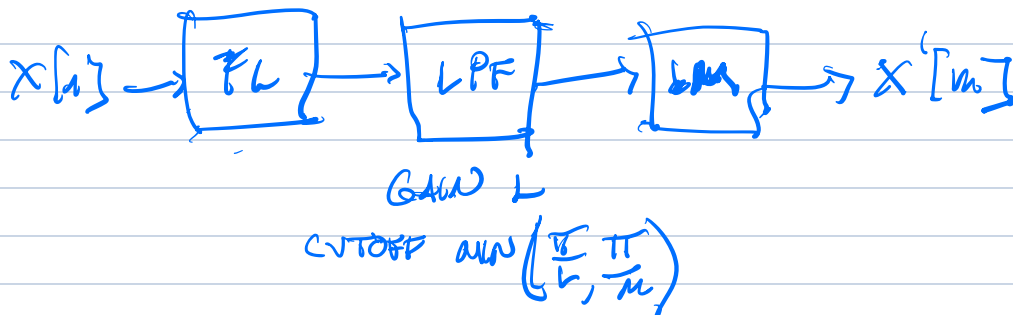
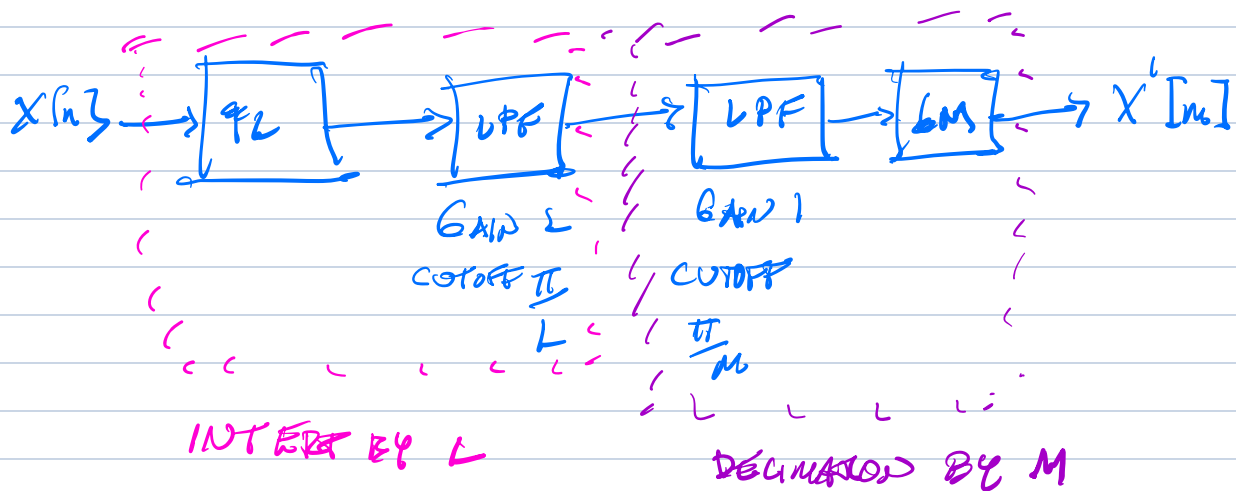
INTERPOLATION BY L



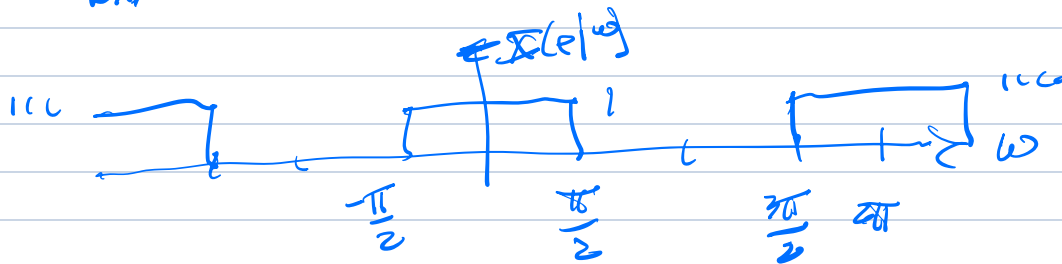
DECIMATION BY M



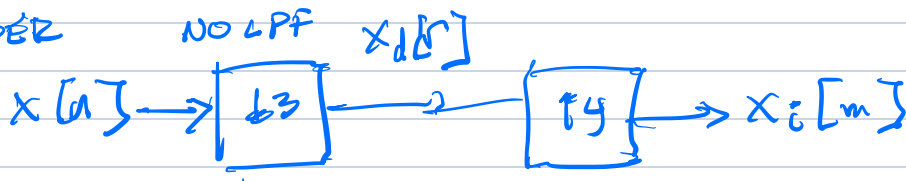
CHANGE OF RATE BY L/M



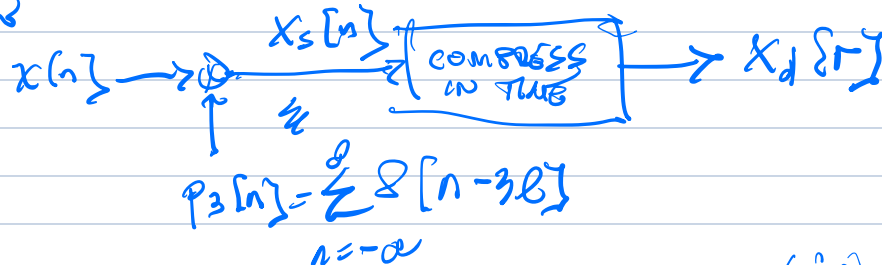
EX. OF CHANGE OF RATE



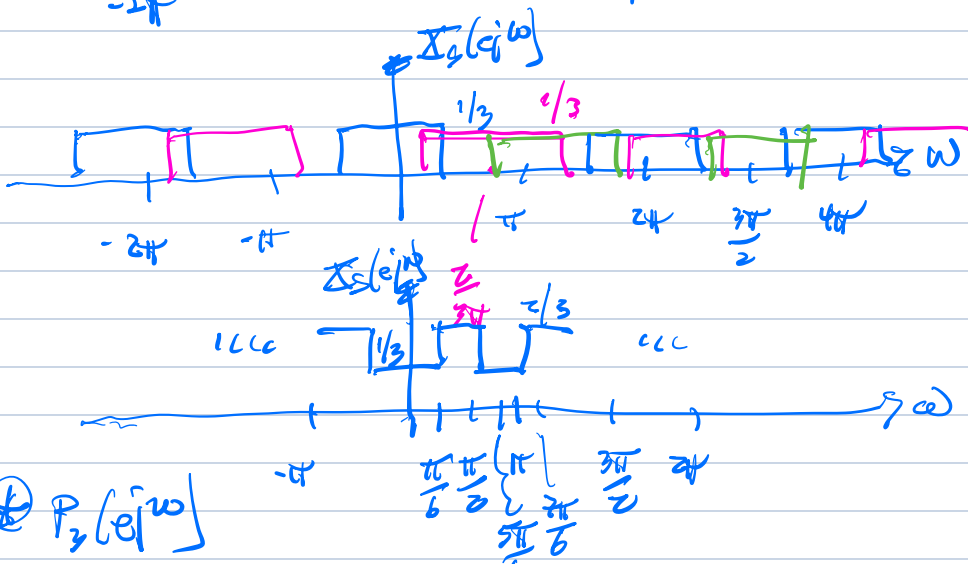
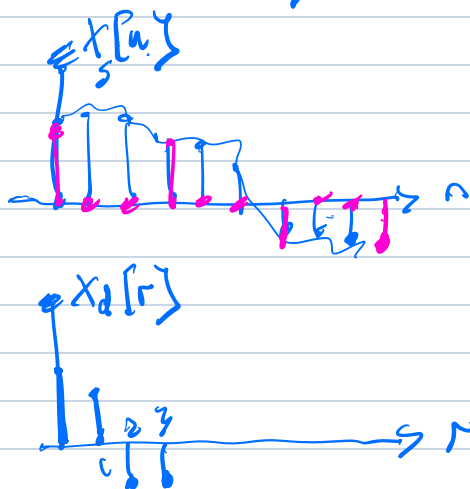
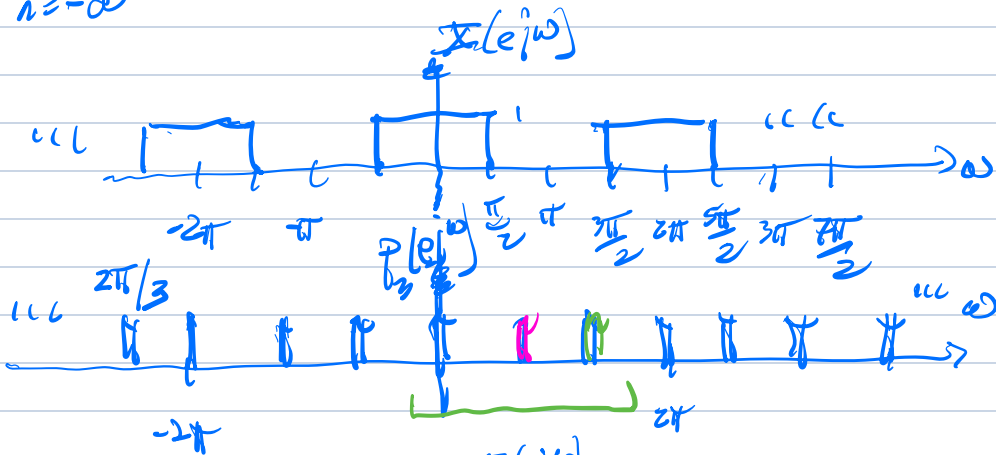
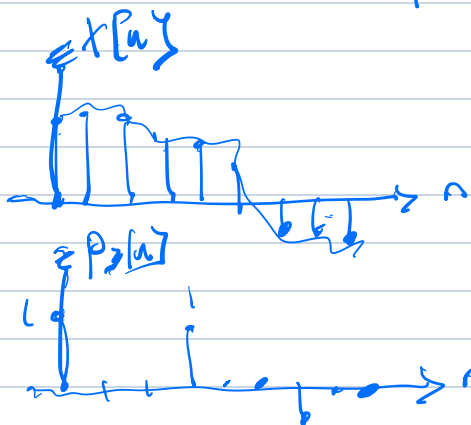
CONSIDER



DECIMATION

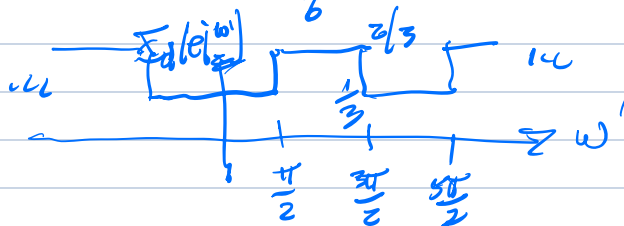


$$p_3[n] = \sum_{n=-\infty}^{\infty} \delta[n - 3\ell]$$

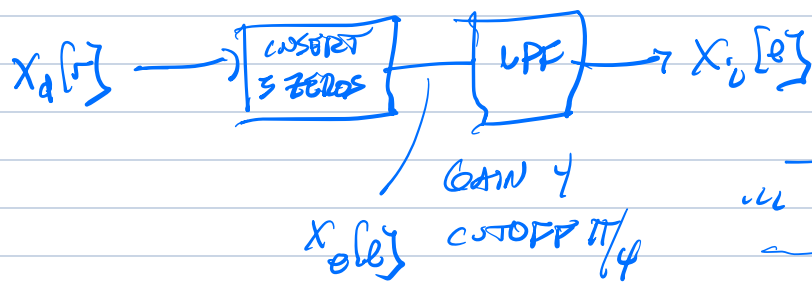


$$X_5(e^{j\omega}) = \frac{1}{2\pi} X(e^{j\omega}) \otimes P_3(e^{j\omega})$$

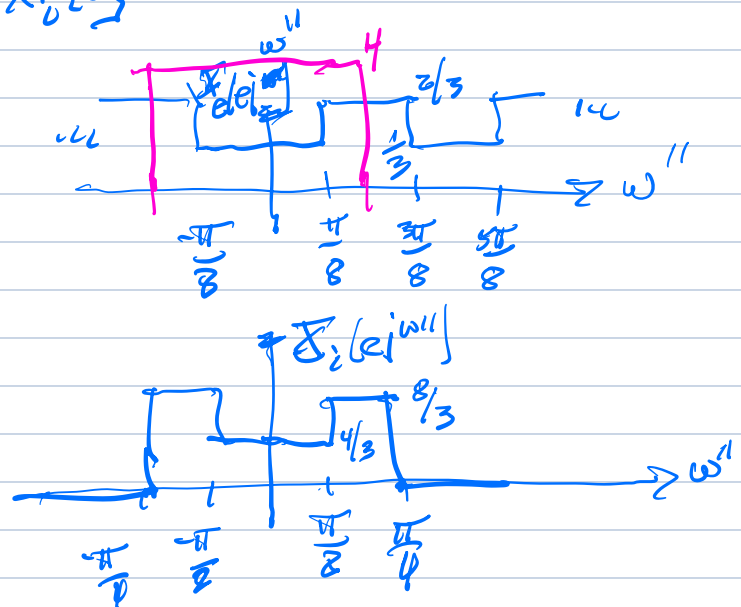
$$X_d(e^{j\omega'}) = X_5(e^{j\frac{\omega'}{3}})$$



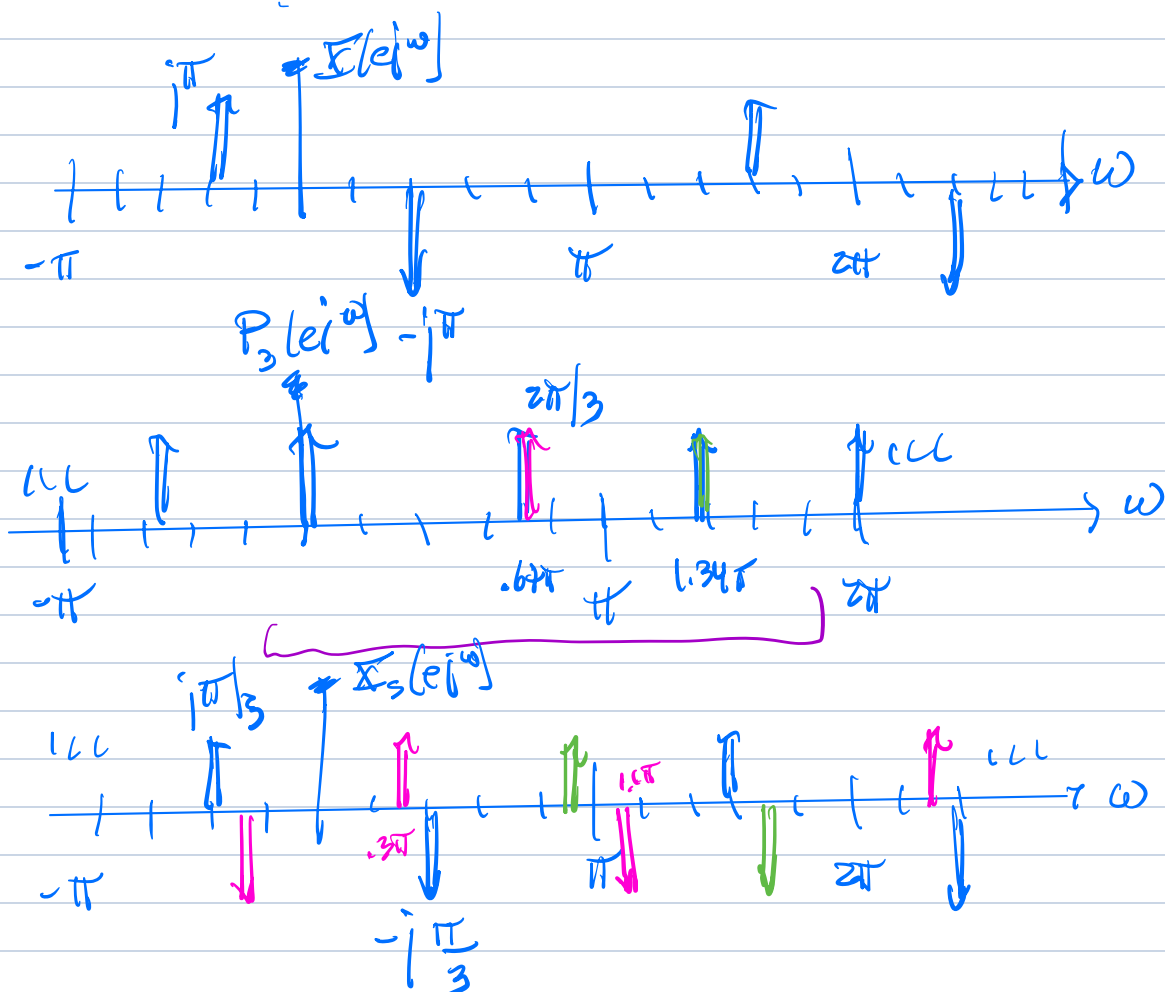
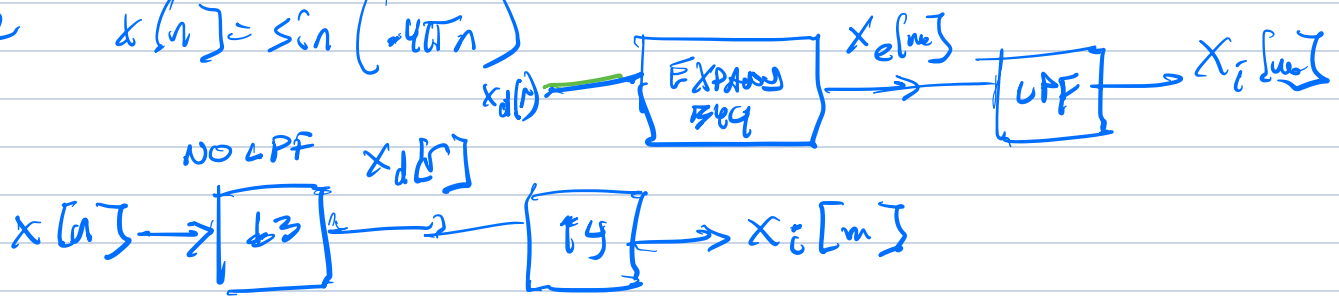
INTERP BY 4 u.u.

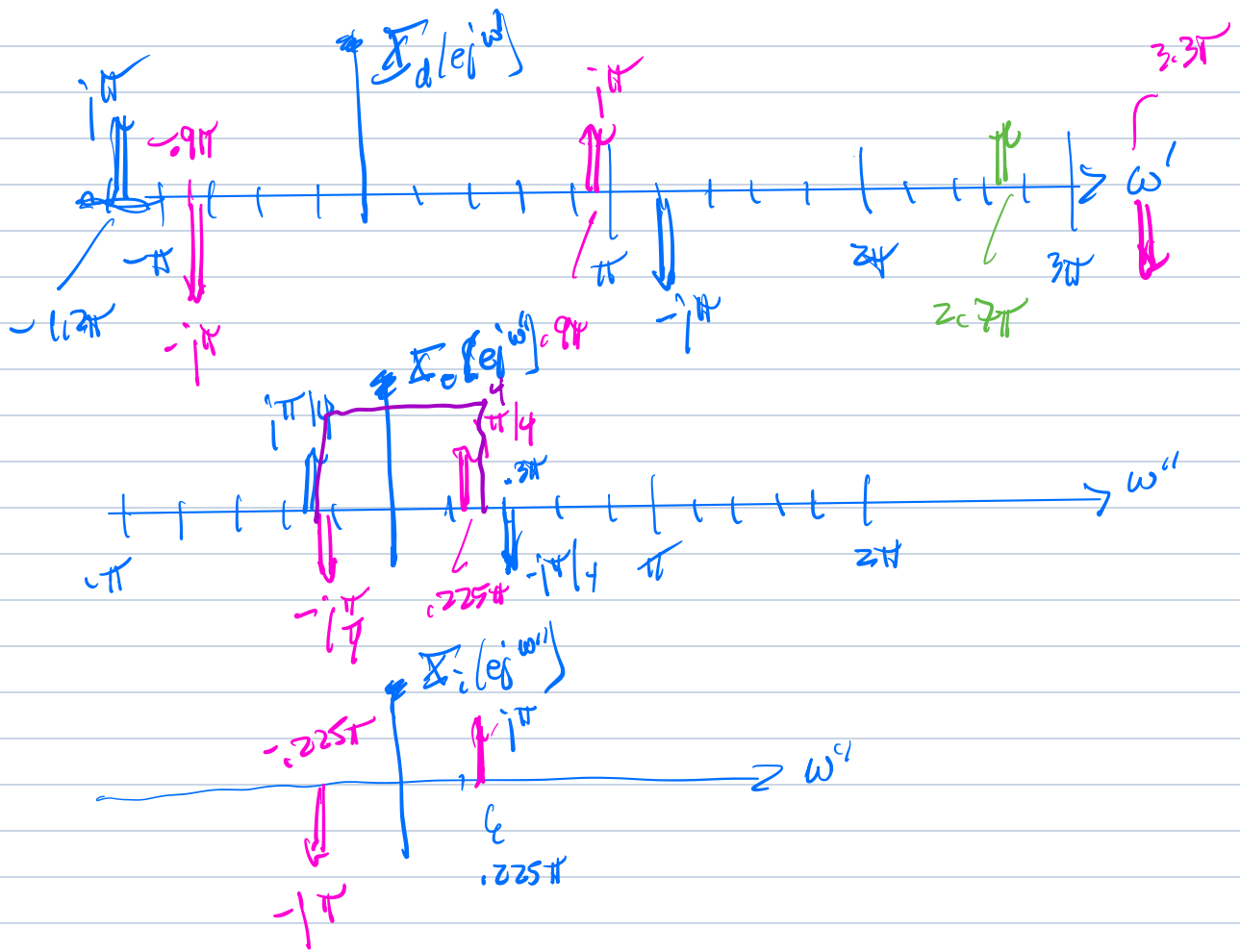


$$X_e(e^{j\omega'}) = X_d(e^{j\omega'' \cdot 4})$$



Ex 2 $x[n] = \sin(-4\pi n)$





$$X_i[m] = -\sin(1.225\pi m)$$