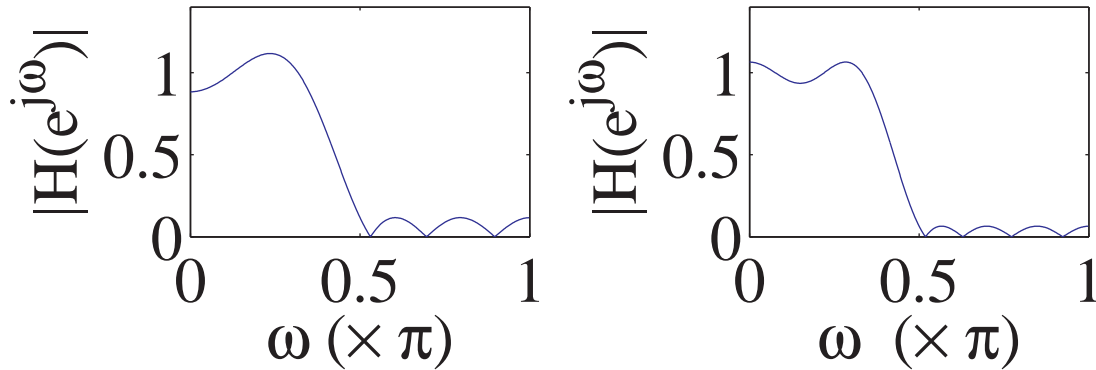


ECEn 487 - Introduction to Digital Signal Processing

Winter 2013

Quiz 10

1. (5 pts) The two following filters were created using the Parks-McClellan algorithm in MATLAB for the same specifications (passband $0 \leq \omega < 0.35\pi$ and stopband $0.5\pi < \omega < \pi$). One, or both, has an impulse response length of 11 samples. From the frequency response, can you tell which one(s) it is? Why?



2. (5 pts) Suppose I have a causal, stable, real signal, $x[n]$, and I know the DTFT of the real part is

$$X_R(e^{j\omega}) = 2 + 2 \cos 2\omega$$

What is $X_I(e^{j\omega})$? Hint: $x[n] = 2x_e[n]u[n] - x_e[0]\delta[n]$