## PROBLEM:

We now have four ways of describing an LTI system: the difference equation; the impulse response, $h[n]$; the frequency response, $H(e^{j\hat{\omega}})$; and the system function, $H(z)$. In the following, you are given one of these representations and you must find the other three.

(a) $y[n] = \frac{1}{4}(x[n] - x[n-4])$.

(b) $h[n] = \delta[n] + 2\delta[n-1] + 3\delta[n-2] + 2\delta[n-3] + \delta[n-4]$.

(c) $H(e^{j\hat{\omega}}) = [2 + 2\cos(\hat{\omega})]e^{-j\hat{\omega}2}$.

(d) $H(z) = z^{-3} + z^{-6} + z^{-9}$.