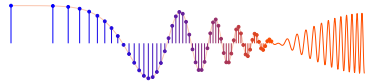

PROBLEM:

A linear time-invariant system has system function

$$\mathcal{H}(z) = (1 + z^{-2})(1 - 4z^{-2}) = 1 - 2z^{-2} - 4z^{-4}$$

The input to this system is

$$x[n] = 20 - 20\delta[n] + 20\cos(0.5\pi n + \pi/4)$$

Determine the output of the system $y[n]$ corresponding to the above input $x[n]$. Give an equation for $y[n]$ that is valid for all n. (*Note: This is an easy problem if you approach it correctly!*)

McClellan, Schafer and Yoder, *Signal Processing First*, ISBN 0-13-065562-7.
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