PROBLEM:

Suppose that a system is defined by the following operator

$$H(z) = 1 - z^{-1}$$

(a) Write the time-domain description of this system—in the form of a difference equation.

(b) Write the formula for the frequency response of the system.

(c) Sketch a plot of the magnitude response versus $\hat{\omega}$.

(d) When the input to the system is $x[n] = \sin(\pi n/100)$ determine the functional form for the output signal $y[n]$.