PROBLEM:

Pick the correct frequency response and enter the number in the answer box:

Difference Equation or Impulse Response

(a) $h[n] = \delta[n] + 2\delta[n-1] + \delta[n-2]$

ANS =

(b) $h[n] = (\frac{1}{2})^{n-1}u[n-1]$

ANS =

(c) $y[n] = \frac{1}{2}y[n-1] + x[n] + x[n-1]$

ANS =

(d) $h[n] = 2\delta[n] - (-\frac{1}{2})^{n}u[n]$

ANS =

Frequency Response

1. $H(e^{j\hat{\omega}}) = 1 + \frac{1}{2}e^{-j\hat{\omega}}$

2. $H(e^{j\hat{\omega}}) = \dfrac{1}{1 - \frac{1}{2}e^{-j\hat{\omega}}}$

3. $H(e^{j\hat{\omega}}) = \dfrac{1}{1 + \frac{1}{2}e^{-j\hat{\omega}}}$

4. $H(e^{j\hat{\omega}}) = \dfrac{1 + e^{-j\hat{\omega}}}{1 - \frac{1}{2}e^{-j\hat{\omega}}}$

5. $H(e^{j\hat{\omega}}) = \dfrac{1 + e^{-j\hat{\omega}}}{1 + \frac{1}{2}e^{-j\hat{\omega}}}$

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

7. $H(e^{j\hat{\omega}}) = \dfrac{e^{-j\hat{\omega}}}{1 - \frac{1}{2}e^{-j\hat{\omega}}}$