PROBLEM:

For each of the system functions listed on the left, find the corresponding impulse response or difference equation on the right, and enter the number in the answer box:

System Function

(a) $H(z) = 1 - z^{-2}$

ANS =

(b) $H(z) = \dfrac{1}{1 - 0.2z^{-1}}$

ANS =

(c) $H(z) = \dfrac{z^{-2}}{1 + 0.2z^{-1}}$

ANS =

(d) $H(z) = 1 + 0.2z^{-1}$

ANS =

(e) $H(z) = \dfrac{1 + 0.2z^{-1}}{1 - z^{-1}}$

ANS =

Impulse Response or Difference Equation

1. $y[n] = -0.2y[n-1] + x[n-2]$
2. $h[n] = \delta[n] - \delta[n-2]$
3. $h[n] = (0.2)^{n+2}u[n+2]$
4. $h[n] = \delta[n] + 1.2u[n-1]$
5. $y[n] = 0.2y[n-1] + x[n]$
6. $h[n] = (-0.2)^n u[n]$
7. $y[n] = -y[n-1] + x[n] + 0.2x[n-1]$
8. $y[n] = x[n] + 0.2x[n-1]$