PROBLEM:
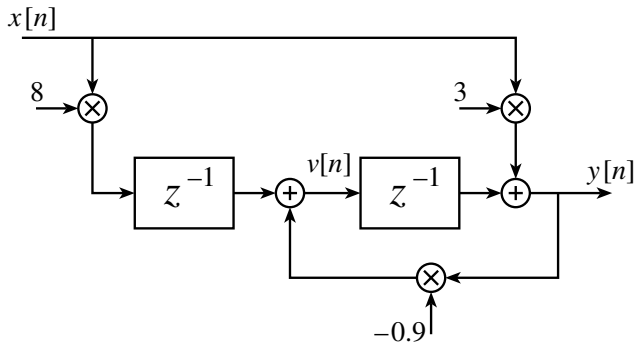
The following signal flow graph structure defines a linear time-invariant system:

(a) Write the two difference equations defined by the signal flow graph—one for $y[n]$ and one for $v[n]$.

(b) Determine the z-transform system function $H(z)$ from the input $x[n]$ to the output $y[n]$.