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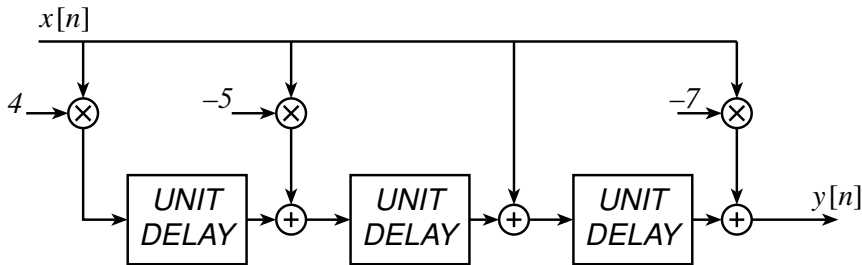
The following signal flow graph structure defines a linear time-invariant system:

(a) Write a simple formula for the difference equation defined by the signal flow graph.

(b) For the following $\mathcal{H}(z)$ determine the difference equation, and draw a representation of this filter in a signal flow graph structure.

$$\mathcal{H}(z) = 2 + 4z^{-1} - 4z^{-3} - 2z^{-4}$$