Lecture 14 – Delays or sum

## Transpose Direct Flow Diagram

- Cascade to find y[n] = b[n-q] where q is equal to which position b is at in the equation (starting at 0)

- q also represents how much delay is on the given variable (on the output)

- IIR systems use feedback to sum together past output values

- (or internal signal past values used to form output signals)

- Much more complicated relationship between IIR flow diagrams and difference equation

- Start easy, build complexity

## Brute Force Approach

- Brute force approach to combining feedforward & feedback components:

- Second summation = v[n]

- is an F.I.R.

- There is a unique standard form (fully reduced) difference equation for a given flow diagram

- But there can be multiple flow diagrams to implement a given difference equation

- Interleaving feedforward and feedback paths can reduce hardware for implementation