

Example 5-1: FIR Filter Coefficients

The FIR filter is completely defined once the set of filter coefficients $\{b_k\}$ is known. For example, if the $\{b_k\}$ of a causal filter are

$${b_k} = {3, -1, 2, 1}$$

then we have a length-4 filter with M=3, and (5.3) expands into a 4-point difference equation:

$$y[n] = \sum_{k=0}^{3} b_k x[n-k]$$

= $3x[n] - x[n-1] + 2x[n-2] + x[n-3]$

McClellan, Schafer and Yoder, *Signal Processing First*, ISBN 0-13-065562-7. Prentice Hall, Upper Saddle River, NJ 07458. © 2003 Pearson Education, Inc.

