

Prob. 1

See Fig. 1. Listing the values from our MATLAB program, we see that they are of the form $h(n) = (-0.8)^n$ for $n \geq 0$ which verifies the solution.

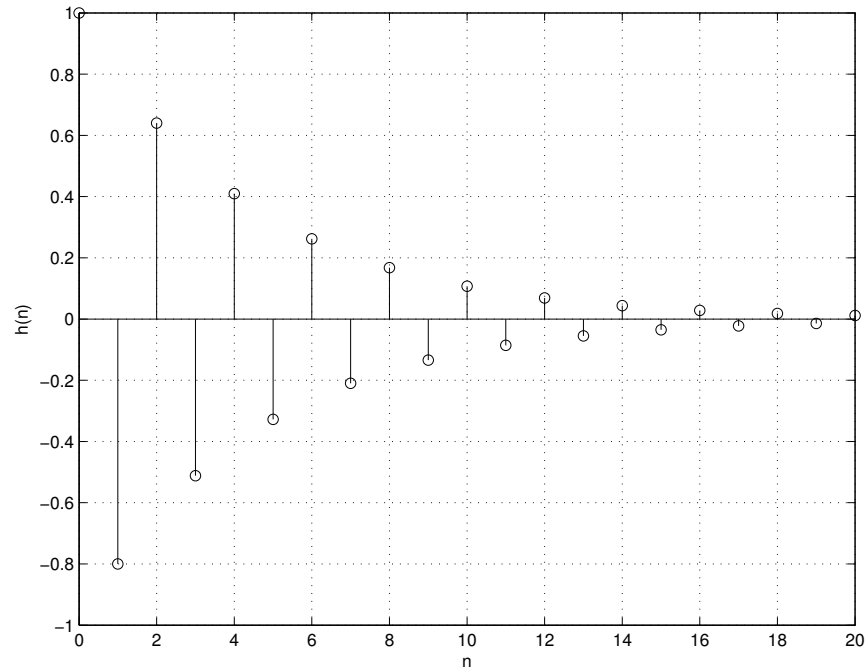


Figure 1: Plot for prob. 1.

Prob. 2

See Fig. 2. Listing the values from our MATLAB program, we see that they are of the form $h(n) = (0.85)^n$ for n even which verifies the solution.

Prob. 3

See Fig. 3. The output signal is the input signal delayed by 8 samples.

Prob. 4

See Fig. 3. The output signal is the input signal delayed by 10 samples. We use $\mathbf{b} = [0, 0, 0, 0, 0, 0, 0, 0, 1]$ and $\mathbf{a} = [1]$.

Prob. 5

See Fig. 4. We clearly see that the 7-point Moving Average (MA) filter in fact smooths the data. As we will see later, the MA filter is a lowpass filter (LPF).

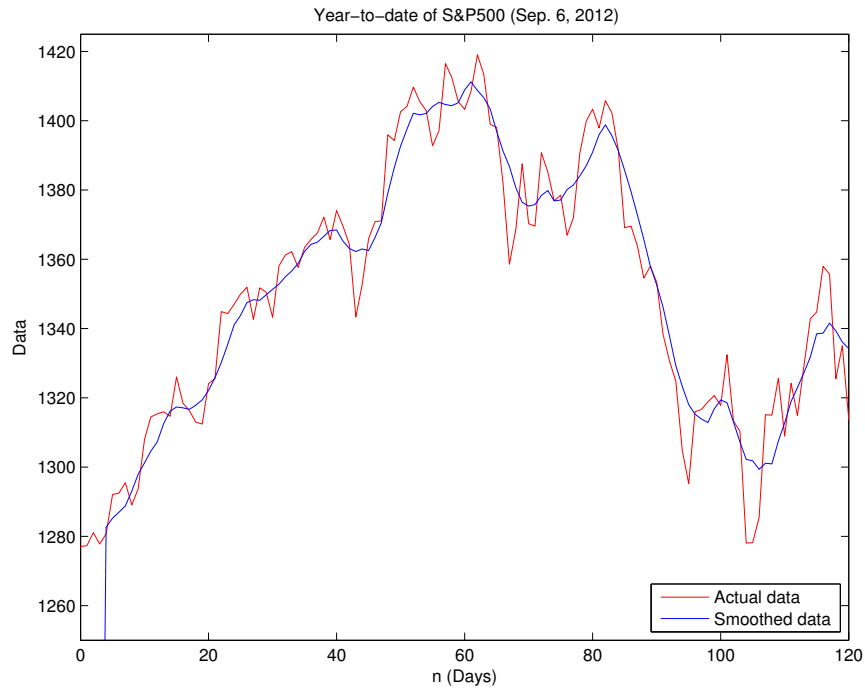


Figure 4: Plot for prob. 5.

Textbook Problems

Solutions to 3.2(b); 3.3(b), (d); and 3.4(b) may be found in the online solution manual.