**EXERCISE 7.7:** In Chapter 6, we saw that the frequency response for a real impulse response must be conjugate symmetric. Show that a lowpass frequency response defined with linear phase

$$H(e^{j\hat{\omega}}) = e^{-j7\hat{\omega}}H_{\rm LP}(e^{j\hat{\omega}})$$

## is conjugate symmetric, which would imply that its inverse DTFT is real.

McClellan, Schafer, and Yoder, *DSP First*, 2e, ISBN 0-13-065562-7. Prentice Hall, Upper Saddle River, NJ 07458. ©2016 Pearson Education, Inc.

