

Example 11-6: Left-Sided Signal

Consider the right-sided exponential signal $x(t) = e^{-bt}u(t)$, where b > 0. We know that its Fourier transform is

 $X(j\omega) = \frac{1}{h + i\omega}$

Now define the left-sided exponential signal
$$w(t) = x(-t) = e^{bt}u(-t)$$
. From (11.50) and Example 11-5 it follows

that $W(j\omega) = \frac{1}{b - i\omega}$

which is what we would obtain by evaluating the Fourier transform integral directly for
$$w(t)$$
.

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

