ROSE-HULMAN INSTITUTE OF TECHNOLOGY
Department of Electrical and Computer Engineering

EC 300 Signals and Systems — Fall 2000

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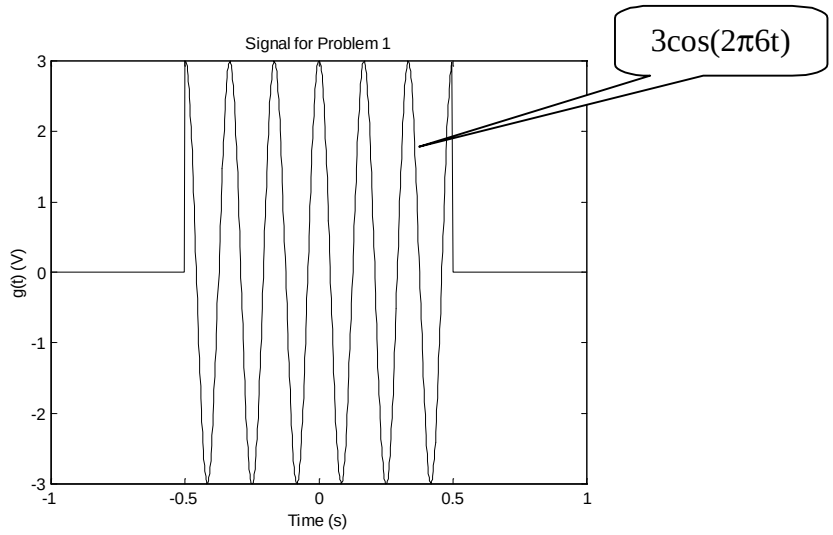
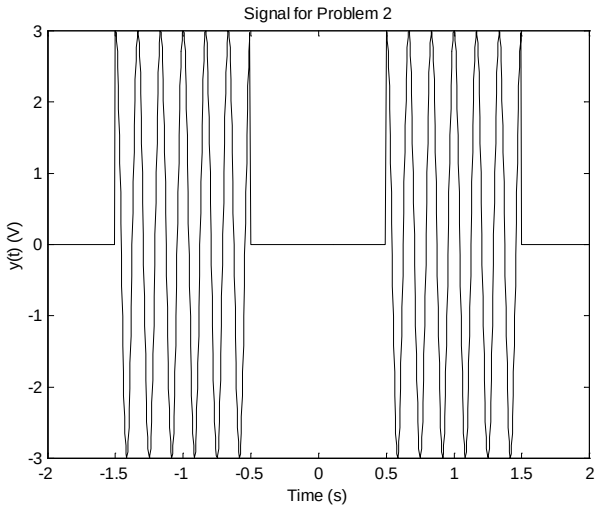
Problem Set 8

These problems are intended to give you practice in using the properties of Fourier transforms. Use the basic transform pairs and properties wherever possible. Try to avoid actually evaluating the Fourier integral.

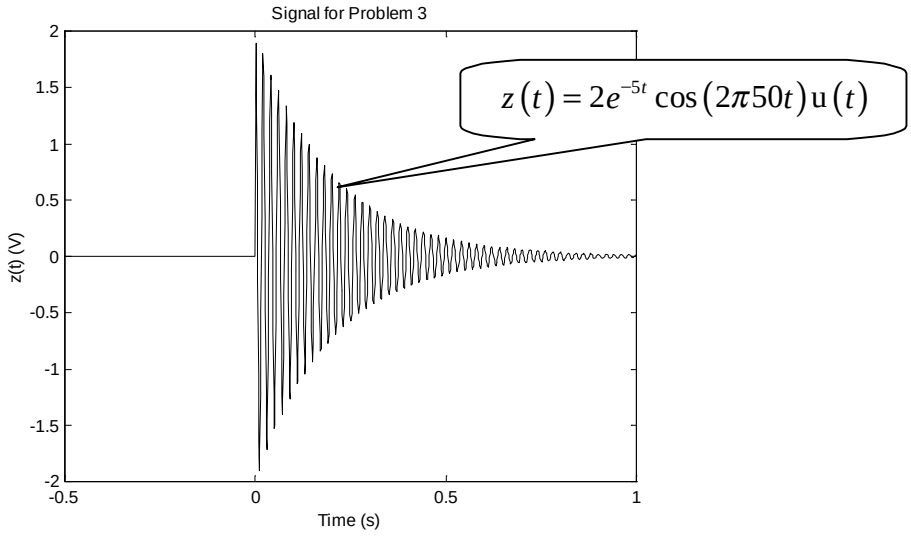
1. Find the Fourier transform $G(f)$ of the signal $g(t)$ shown below.



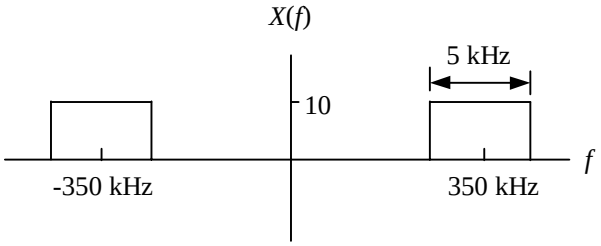
2. Using your answer to problem 1, find the Fourier transform $Y(f)$ of the pulse pair $y(t)$ shown below.



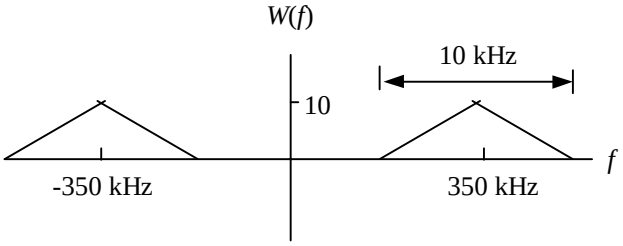
3. Find the Fourier transform $Z(f)$ of the signal $z(t)$ shown below. Provide a neat, labeled hand plot of the spectrum.



4. Find the signal $x(t)$ whose Fourier transform $X(f)$ is shown. Provide a neat, labeled hand plot of your result.



5. Find the signal $w(t)$ whose Fourier transform $W(f)$ is shown. Provide a neat, labeled hand plot of your result.



This problem set is due at the start of class on Thursday, November 2.