

Comment: In the following problems, your book uses terminology such as “DSB-SC” or “coherent/synchronous modulation”. Don’t be confused by these words. They all refer to the modulation/demodulation method for AM signals discussed in class.

1. Chapter 4, Problem 4.7-1.

2. Chapter 4, Problem 4.7-2, Parts (a), (b), (d), (e).

3. Chapter 4, Problem 4.7-3.

Hint: Use Fourier series on $x(t)$.

4. Chapter 4, Problem 4.7-4.

5. Review the properties of the Fourier transform by listening to (or singing along with ☺) the “Fourier Song” which can be played here

<http://ecs.syr.edu/faculty/fardad/Teaching/ELE351/Hw/FourierSong.mp3>

and its lyrics can be found here

<http://ecs.syr.edu/faculty/fardad/Teaching/ELE351/Hw/FourierSongLyrics.pdf>