

ECE 457
HOMEWORK #6
Due February 25, 2005

- Read Chapter 3.2.2-3.2.4
- Office Hours: W 11:30-1:00, Th 9:30-11:00

1. [20] 3.27 from Ziemer and Tranter.
2. [20] 3.36 from Ziemer and Tranter.
3. [25] 3.40 from Ziemer and Tranter.
4. [20] 3.42 from Ziemer and Tranter.
5. [15] An angle modulated signal has the form

$$x_c(t) = 100 \cos(2\pi f_c t + 4 \sin 2\pi f_m t)$$

where $f_c = 10\text{MHz}$ and $f_m = 1000\text{Hz}$.

- a) Assuming that this is an FM signal, determine the modulation index and the transmitted signal bandwidth.
- b) Repeat part a) if f_m is doubled.