

EECS 307 — Homework #5

2/5/20, due 2/14/20

1. Given the message signal $m(t) = \text{sinc } 2Wt$, write the expression for the transmitted signal $x_c(t)$ assuming USB-SSB modulation. Show that the envelope is $A(t) = \frac{1}{2} A_c |\text{sinc } Wt|$. Then sketch $A(t)$ taking $A_c = 2$ and compare with $m(t)$. (Hint: Use the fact that $\sin^2 \theta = \frac{1}{2} (1 - \cos 2\theta)$.)

Z&T (**Ed. 6**): 3.14, 3.28, 3.30 (do the top graph only), 3.31, 3.32