EE 320 Communications Principles

Home Work # 1 (Ist Semester 1432/1433H G2011)

Question 1

Determine the 3-db bandwidth for the following signals:

(a) g(t)=exp(-a|t|)

(b) g(t)= exp(-a|t|)cos(2πf$_c$t)

Question 2

1. Problem 2.38, Textbook, Page 95
2. Problem 2.36, Page 95

Question 3

1. Problem 2.34(a), Textbook, Page 95
2. Problem 2.43, Textbook, Page 96

Question 4

A sinc pulse **x(t) = 4 sinc(8t**) is passed through an ideal band-pass filter whose magnitude spectrum is $|H(f)| = 6$, $B_1 \le |f| \le B_2$, and zero otherwise. Calculate the output energy for $B_1 = 2, B_2 = 4$.