ECE228A
Homework #2

Agrawal (Third Edition):

Problem 2.1
Problem 2.3
Problem 2.5
Problem 2.9
Problem 2.10
Problem 2.12
Problem 2.16

Term Project:
Use simulation software that can do time simulations like Matlab.

1) Operate your system at 2.5 Gbps (OC-48).
2) First generate a pseudo-random number generator that outputs a series of 10 bits of zeros and ones.
3) Next create an output rise and fall waveform that represents the laser optical output in response to a bit as it turns on and off. For now assume the laser turns on with an exponential rise time and turns off with an exponential decay time where you can vary the rise and fall time constants. Make the ability to program arbitrary rise and fall functions as later we will make the laser model more sophisticated. You should sample each bit with at least 100 data points to get high enough resolution.
4) Plot the time domain of your ten bits of pseudo random data.