ET 438b
Sequential Digital Control and Data Acquisition

1.) A carrier signal of $V_c(t) = 2\sin(2\pi(2500)t)$ is used to AM modulate the following information signals:

a.) $V_1(t) = \sin(2\pi 100t) + \sin(2\pi 175t)$
b.) $V_2(t) = \sin(377t) + \sin(754t)$

Find the frequency components of $V_c(t) \cdot V_1(t)$ and $V_c(t) \cdot V_2(t)$ in Hertz. Sketch two plots of the frequency components that show the magnitude and the frequencies found in the AM signals of each of the above products.

2.) For the information signals in problem 1, determine the minimum sampling frequency that can be used to convert these analog signal into discrete values.