# Decision Homework 3

**Ch4**

**1a)** $f_m = 1000\,hz$  $k_f = 10000\,hz$  $\beta = \dfrac{10000 \cdot 1}{1000} = 100$

**1b)** $B_T = 2 \cdot 1000 \cdot (100+1) = $ ~~202000~~ $202000\,hz$

**2)** $2000\pi \cdot 2 = 4000\pi = 2000\,hz.$

**Ch5**

**1.)** $P(A_0) = .4$  $P(A_1) = .6$  $P = 0.1$

$P(B_0 | A_0) = .9$   $P(B_0) = .4 \cdot .9 + .6 \cdot .1 = .42$

$P(A_0 | B_0) = \dfrac{P(A_0) \cdot P(B_0 | A_0)}{P(B_0)} = \dfrac{.4 \cdot .9}{.42} = .8571$

**2)** Heads = Success  Tails = Failure

$P(3) = \begin{pmatrix} 5 \\ 3 \end{pmatrix}(.5)^3(.5)^2 = \dfrac{5!}{3! \, 2!}(.5)^5 = .3125$