Department of Electrical \& Computer Engineering
University of California, Santa Barbara
ECE 235
Fall 2010
Shynk
H.O. \#6

## HOMEWORK \#3

Due Friday, October 22, 2010 (5:00 p.m.)

Reading: Read Appendix D and Chapters 5 and 6

## Problems:

1. Problem 4.25
2. Problem 4.36
3. Problem 4.47
4. Problem 5.5
5. Problem 5.19
6. Let $A, B$, and $C$ be events in the fields $\mathcal{F}_{1}, \mathcal{F}_{2}$, and $\mathcal{F}_{3}$, respectively, all for the same discrete sample space $\Omega$. For $\mathcal{F}_{3} \subset \mathcal{F}_{2} \subset \mathcal{F}_{1}$, show that

$$
\begin{equation*}
E[E[X \mid C] \mid B]=E[X \mid C] \tag{1}
\end{equation*}
$$

