Due Wednesday, September 10

1. Chapter 1, No 4
2. Chapter 1, No 12 (just do the probability)
3. Chapter 1, No 18
4. Chapter 1, No 23
5. Chapter 1, No 36
6. Chapter 2, No 6
7. Chapter 2, No 7
8. Chapter 2, No 8
9. Chapter 2, No 33
10. Chapter 2, No 37
11. Chapter 2, No 50
12. Chapter 2, No 55
13. Chapter 2, No 58
14. Suppose that $X$ and $Y$ have a continuous joint distribution for which the joint p.d.f. is as follows:

$$f(x, y) = \begin{cases} cy^2 & \text{for } 0 \leq x \leq 2 \text{ and } 0 \leq y \leq 1, \\ 0 & \text{otherwise.} \end{cases}$$

Determine (a) the value of the constant $c$; (b) $Pr(X + Y > 2)$; (c) $Pr(Y < 1/2)$; $Pr(X \leq 1)$; (e) $Pr(Y = X^2)$.

15. Suppose that $X$ and $Y$ have a discrete joint distribution for which the joint p.m.f. is as follows:

$$f(x, y) = \begin{cases} \frac{1}{30}(x + y) & \text{for } x = 0, 1, 2 \text{ and } 0, 1, 2, 3, \\ 0 & \text{otherwise.} \end{cases}$$

(a) Determine the marginal p.m.f.’s of $X$ and $Y$.
(b) Are $X$ and $Y$ independent?