**STA 504 Homework #2**

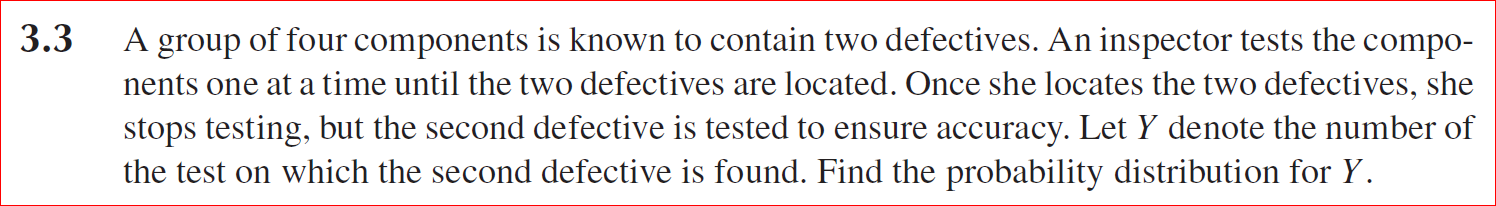
**Due: Monday, September 18**

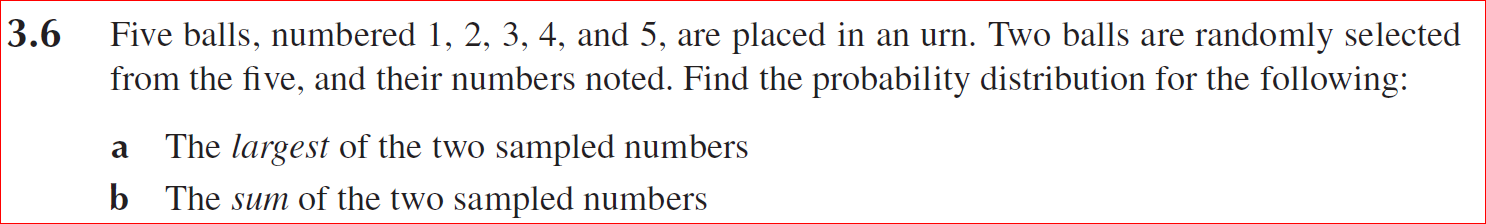
**Show your work to earn full credit. You are encouraged to work with your peers on assignments. The write-up must be your own.**

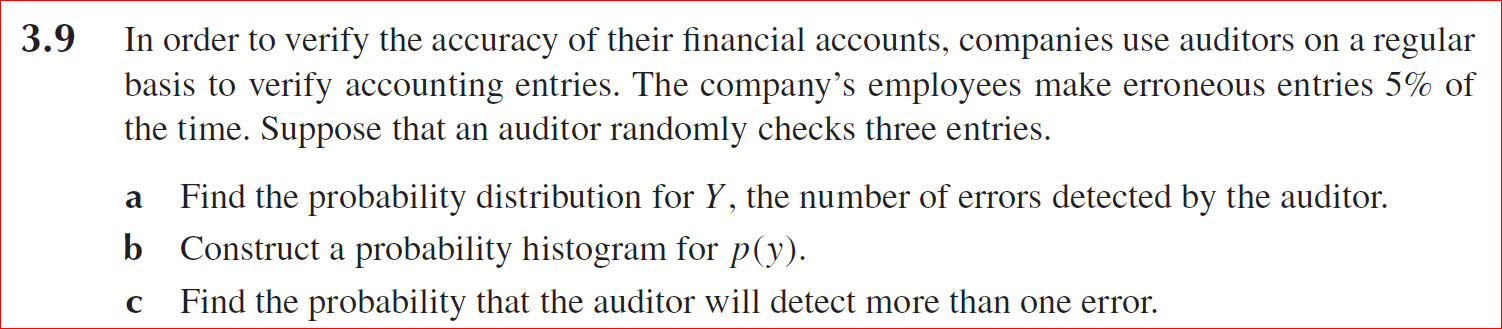
**Caution:** The problem labels in the following may not be different from those used in the textbook.

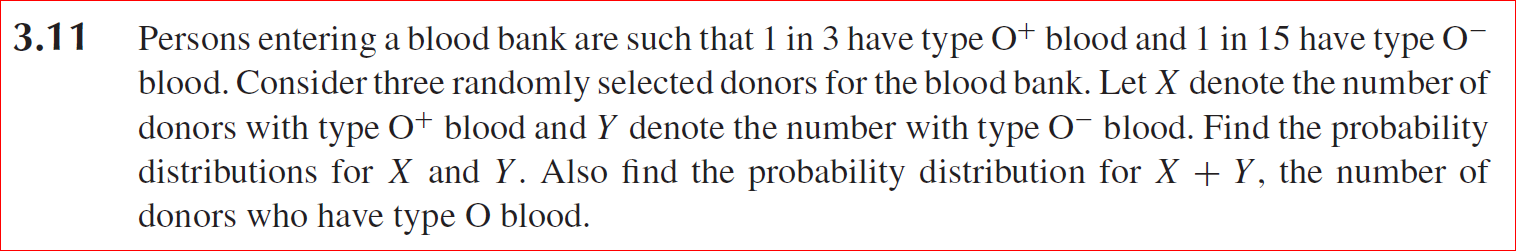
**Problems are chosen from Section 3.1:** Definitions of random variables and their probability distributions.

You need to use some of the concepts we covered in Chapter 2 to solve some of these problems.









**Calculus Review**

Answer the following questions for the given function below.

(1). Specify the domain and range of this function.

(2). Is this an odd function or even function? Justify your answer.

(3). Find the derivative of the function;

(4). Is this function monotonic? Justify your answer using the definition of the monotonic function.

(5). If your answer in (2) is Yes, find the inverse function of f(x), denoted by f-1(x). Please also specify the domain and the range of f-1(x). Compare the domain and range of f(x) with that of f-1(x).