

Quiz 1

Student Name:

1. True or False

- a) A simple random sample is guaranteed to reflect exactly the population from which it was drawn (T or F)
- b) The simple medium always equal to one of the values in the sample (T or F)
- c) If two events A and B are mutually exclusive, then $P(A \cup B) = P(A \cap B)$ (T or F)
- d) A drawer contains 5 red socks and 4 green socks. The probability that randomly chosen two socks match is 0.44 (T or F)

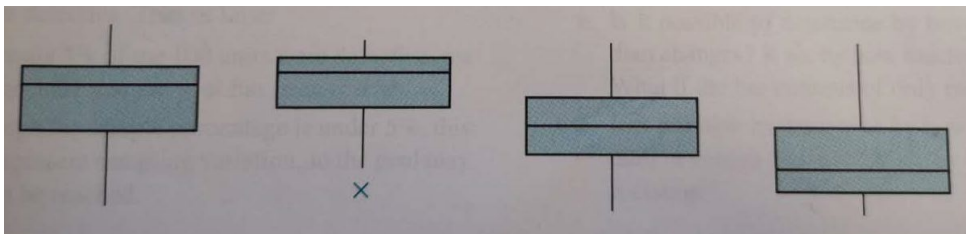
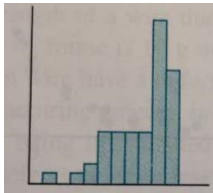
2. A sample of 100 adult women was taken, and each was asked how many children she had. The results were as follows. Which of the following calculation results is correct regarding:

- i. The sample mean number of children
- ii. The sample medium of the number of children
- iii. The first quartile of the number of children

Children	0	1	2	3	4	5
# of Women	27	22	30	12	7	2

- a) i -1.56; ii -2; iii -0
- b) i -1.50; ii -2.5; iii -0
- c) i -1.56; ii -2.5; iii -1
- d) i -1.50; ii -2; iii -1

3. Which of the following boxplots that represents the same data set of the histogram? Circle the one that matches



- a)
- b)
- c)
- d)

4. Let S be the event that a randomly selected college student has taken a statistics course, and let C be the event that the same student has taken a chemistry course. Suppose $P(S)=0.4$, $P(C)=0.3$, and $P(S \cap C)=0.2$. What is the probability that a student has taken chemistry but not statistics?

- a) 0.2
- b) 0.1
- c) 0.3
- d) 0.25

5. An automobile insurance company divides customers into three categories, good risks, medium risks, and poor risks. Assume that 70% of the customers are good risks, 20% are medium risks, and 10% are poor risks. Assume that during the course of a year, a good risk customer has probability 0.005 of filing an accident claim a medium risk customer has probability 0.01, and a poor risk customer has probability 0.025. A customer is chosen randomly. What is the probability that the customer is a good risk given that the customer has filed a claim?

- a) 0.4375
- b) 0.3475

- c) 0.0035
- d) 0.008