King Fahd University of Petroleum & Minerals
Department of Mathematics & Statistics
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Quiz #1-Section 02

Name: *ID:* *Serial:*

Q1: (*1 pt. each*) What is the error in each of the following statements?

a. The probability that a computer sales person will sell 0, 1, 2, or 3 computers on a given week are 0.18, 0.15, 0.29, and 0.39 respectively.

b. The probability that you will come to the class on time tomorrow is 0.4 and the probability that you will not come to the class on time tomorrow is 0.5.

c. The probability that a driver will make 0, 1, 2, 3, 4 car accidents in a year are 0.21, 0.15, 0.43, - 0.25, 0.46 respectively.

Q2: (*2 pts. each*) Suppose that 50% of the time item A is available in a store while the item B is available 30% of the time. Find the probability that both items A and B are available.

a. Assuming that availability of the item A has nothing to do with that of item B.

b. Assuming that A and B are never available together.

c. Assuming that if the item A available, then with probability 0.2, the item B will be available.

Q3: (*2 pts. each*) In a process that manufactures aluminum cans, the probability that a can has a flaw on its side is 0.02, the probability that a can has a flaw on the top is 0.03, and the probability that a can has a flaw on both the side and the top is 0.01. A can randomly selected,

1. What is the probability that it has a flaw?

2. What is the probability it has no flaw?

3. What is the probability it has flaw on the top but not on its side?

4. What is the probability that a can will have a flaw on the side, given that it has a flaw on the top?

Q4: (*3 pts.*) For the events A and B, $P(B) = k$, $P(A|B) = k^2$, $P(A|\bar{B}) = 2k$, find the value of k if the events $\bar{A}$ and $\bar{B}$ are mutually exclusive and $k < 1$.