Quiz # 3 semester 172 Section: 02

NAME: ID #: Serial #:

1. A system contains two components *A* and *B*. The system will function only if both components function. The probability that *A* function is 0.96, the probability that *B* functions is 0.94, and the probability that either *A* or *B* functions is 0.98.

a. Write out the **sample space** to solve the following questions. (2 marks)
b. What is the probability that **none** of the two components function?
c. What is the probability that the system functions?
d. Are the events *A* and *B* independent?

2. At a certain gas station, 40% of the customers use regular unleaded gas (B1), 35% use extra unleaded gas (B2), and 25% use premium unleaded gas (B3). Of those customers using regular gas, only 30% fill their tanks (event A). Of those customers using extra gas, 60% fill their tanks, whereas of those using premium, 50% fill their tanks.

a. What is the probability that the next customer fills the tank?
b. If the next customer fills the tank, what is the probability that regular gas is requested?