Q1

Assume that

$P(A) = 0.2,\ P(B) = 0.3,\ P(A \cap B \cap C) = 0.05$ *and* $P(\overline{A \cap B}) = 0.94$,

1. A and B are

(a) independent
(b) dependent
(c) disjoint
(d) non of the above

2. $P(C \mid A \cap B)$ is:

(a) 0.3338
(b) 0.8333
(c) 0.3833
(d) 0.3383

Q2. If

The members of a consulting firm rent cars from rental agencies: 60% from agency A, 30% from agency B and 10% from agency C. If 9% of the cars from agency A need a tune-up, 20% of the cars from agency B need a tune-up and 6% of the cars from agency C need a tune-up.

1. The probability that a rental car delivered to the firm will need a tune-up is:

(a) 0.21
(b) 0.12
(c) 0.129
(d) 0.321

2. The probability that a rental car delivered to the firm will need no tune-up is:

(a) 0.88
(b) 0.78
(c) 0.77
(d) 0.12

3. If a rental car delivered to the firm needs a tune-up, then the probability it is came from agency A is :

(a) 0.21
(b) 0.921
(c) 0.45
(d) 0.54

4. If a rental car delivered to the firm needs no tune-up, then the probability it is came from agency B is :

(a) 0.550
(b) 0.2727
(c) 0.7272
(d) 0.1337