(092) Math 131:Finite Mathematics QuizTest-3(8.4-8.5-8.6): June 02, 2010

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Contents

Marks: 20; Time: 15 Minutes

NAME:..

I.D.#:

SERIAL# SECTION #: (check: Sec.01A)

Sr.	08 am Sc 01	07 am Sc 02	10 am Sc 03

NOTE: SHOW COMPLETE SOLUTION.

Q1. (Marks:4). $411SM37$. A box has 10 marbles in it, 6 red amd 4 white. Suppose we draw a marble from the box, replace it, and then draw another. Find the probability that

(a) both marbles are red.

$(A) \longrightarrow 0.01$ $(B) \longrightarrow 0.04$
$(C) \longrightarrow 0.09$ $(D) \longrightarrow 0.16$
$(E) \longrightarrow 0.25$ $(F) \longrightarrow 0.36$
$(G) \longrightarrow 0.49$ $(H) \longrightarrow 0.64$
$(J) \longrightarrow 0.81$ $(K) \longrightarrow 0.33$
$(N) \longrightarrow$ NONE OF THE ABOVE CHOICES IS CORRECT.

YOUR ANSWER := _____

(b) Exactly one of the two marbles is red?

$(A) \longrightarrow 0.10$ $(B) \longrightarrow 0.20$
$(C) \longrightarrow 0.30$ $(D) \longrightarrow 0.40$
$(E) \longrightarrow 0.50$ $(F) \longrightarrow 0.60$
$(G) \longrightarrow 0.70$ $(H) \longrightarrow 0.80$
$(J) \longrightarrow 0.90$ $(K) \longrightarrow 0.75$
$(N) \longrightarrow$ NONE OF THE ABOVE CHOICES IS CORRECT.

YOUR ANSWER := _____

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Q2. (Marks: 7). $403SM1E$. Consider a group of 36 students. Define the events E and F as

E: Student has the blue eyes; F: Student is female

With regard to these two characteristics, suppose it is found that the 36 students are distributed as shown in the table.

	Blue Eyes E	Not Blue Eyes E^c	Totals
Female, F	12	12	24
Male, M	6	6	12
Totals	18	18	36

Find the probabilities of the following events:

(a) If we choose a student at random, then the probability that the student has Blue Eyes: $P(E) =$

$(A) \longrightarrow 0.10$ $(B) \longrightarrow 0.20$
$(C) \longrightarrow 0.30$ $(D) \longrightarrow 0.40$
$(E) \longrightarrow 0.50$ $(F) \longrightarrow 0.60$
$(G) \longrightarrow 0.70$ $(H) \longrightarrow 0.80$
$(J) \longrightarrow 0.90$ $(K) \longrightarrow 0.75$
$(N) \longrightarrow$ NONE OF THE ABOVE CHOICES IS CORRECT.

YOUR ANSWER := _____

(b) If we choose a student at random, then the probability that the student has Blue Eyes and the student is a female is given by: $P(E \cap F) =$

$(A) \longrightarrow 0.11111$ $(B) \longrightarrow 0.22222$
$(C) \longrightarrow 0.33333$ $(D) \longrightarrow 0.44444$
$(E) \longrightarrow 0.55555$ $(F) \longrightarrow 0.66667$
$(G) \longrightarrow 0.77778$ $(H) \longrightarrow 0.8889$
$(J) \longrightarrow 0.99999$ $(K) \longrightarrow 0.75681$
$(N) \longrightarrow$ NONE OF THE ABOVE CHOICES IS CORRECT.

YOUR ANSWER := _____

(c) If we choose a student at random, then the probability that the student has Blue Eyes if it is known that the student is a female, is given by: $P(E|F) =$

$(A) \longrightarrow 0.10$ $(B) \longrightarrow 0.20$
$(C) \longrightarrow 0.30$ $(D) \longrightarrow 0.40$
$(E) \longrightarrow 0.50$ $(F) \longrightarrow 0.60$
$(G) \longrightarrow 0.70$ $(H) \longrightarrow 0.80$
$(J) \longrightarrow 0.90$ $(K) \longrightarrow 0.75$
$(N) \longrightarrow$ NONE OF THE ABOVE CHOICES IS CORRECT.

YOUR ANSWER := _____

(d) Are the events E and F independent?

YES OR NO OR NEITHER.

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Q.3. $(Marks:9)$. At a shooting gallery, suppose Bill, Jim, and linda each take one shot at a moving target. The probability that Bill hits the target is 0.5, and for Jim and Linda, the probabilities rae 0.4 and 0.7, respectively. Assume independence and find each of the following.

(a) The probability that none of then hit the target.
Answer:_____

(b) The probability that none of them hit the target.
Answer:_____

(c) The probability that exactly one of them hits the target.
Answer:_____