AxM: Curso SOA P
Tarea 3

Ejercicio 1

An actuary studying the insurance preferences of automobile owners makes the following conclusions:

(i) An automobile owner is twice as likely to purchase collision coverage as disability coverage.

(ii) The event that an automobile owner purchases collision coverage is independent of the event that he or she purchases disability coverage.

(iii) The probability that an automobile owner purchases both collision and disability coverages is 0.15.

Calculate the probability that an automobile owner purchases neither collision nor disability coverage.

(A) 0.18
(B) 0.33
(C) 0.48
(D) 0.67
(E) 0.82

Ejercicio 2

A website requires a five-character password consisting of exactly three distinct characters selected from the 26 upper-case letters of the alphabet and exactly two characters, not necessarily distinct, selected from the ten digits. The password must begin with one of the selected letters.

Calculate the maximum number of unique passwords, in millions, the site will accommodate.

(A) 3.120
(B) 4.212
(C) 4.680
(D) 8.424
(E) 9.360

Ejercicio 3

In a group of 35 patients, 9 have high blood pressure, 9 have high cholesterol, and 15 have high blood pressure or high cholesterol.

From these 35 patients, a doctor needs to select a group of 8 patients for a test in which exactly 4 have high blood pressure only, exactly 1 has high cholesterol only, and exactly 2 have both high blood pressure and high cholesterol.

Calculate the number of different groups the doctor can select for this test.

(A) 90
(B) 270
(C) 5,400
(D) 47,628
(E) 238,140

Ejercicio 4

Companies P, Q, and R use routes that take their trucks through a common inspection checkpoint each day. The number of trucks for each company that pass the checkpoint each day is as follows:

Company	Number of Trucks
P	4
Q	3
R	2
Total	9

Calculate the probability that at least one of two randomly chosen trucks is from Company P.

(A) 0.28
(B) 0.31
(C) 0.56
(D) 0.69
(E) 0.72

Ejercicio 5

A company is marketing an investment opportunity to four potential customers. The company believes that its probability of making a sale is 0.5 for each of the first three customers but that it is only 0.1 for the fourth customer. The customers' purchases are independent of one another.

Calculate the probability that at most two customers purchase the investment.

(A) 0.38
(B) 0.46
(C) 0.54
(D) 0.84
(E) 0.90

Ejercicio 6

An agent markets a new life insurance policy to nine people. Six of the nine have already purchased an insurance product from the agent.

The agent randomly selects four of the nine people for appointments today.

Calculate the probability that at least three of the four people with appointments have already purchased an insurance product from the agent.

(A) 0.10
(B) 0.12
(C) 0.14
(D) 0.48
(E) 0.60

Ejercicio 7

Urn A contains five red chips and four white chips. Urn B contains four red chips and five white chips. Two chips are transferred from urn A to urn B. Then a single chip is drawn from urn B.

Calculate the probability that the chip drawn from urn B will be white.

(A) 0.455
(B) 0.535
(C) 0.545
(D) 0.556
(E) 0.571

Respuestas

1. B
2. E
3. C
4. E
5. D
6. E
7. B

Práctica adicional

Ejercicios de la guía gratuita de la SOA para el examen Probability :

4, 6, 7, 9, 10, 11, 12, 16, 97, 120, 121, 127, 128, 132, 138, 149, 151, 154, 186, 188, 191, 194, 195, 196, 210, 259, 263, 265, 274, 312, 313, 319, 323, 332, 333, 335, 349, 351, 354, 365, 366, 368, 369, 376, 377, 389, 398, 403, 408, 418, 423, 438, 456, 468, 486, 487, 490, 506, 528, 530, 531, 532, 537, 544, 550, 561, 590, 594, 620