

Probability Assignment 4

Task Requirements Document



Task Requirements

Discrete Probability Distribution:

For each of the following problems, mention the distribution that can be used to describe this case and why you chose it?

1. In a certain city district, the need for money to buy drugs is stated as the reason for 75% of all thefts. Find the probability that among the next 5 theft cases reported in this district,

(a) exactly 2 resulted from the need for money to buy drugs.

(b) at most 3 resulted from the need for money to buy drugs.

2. The probability that a patient recovers from a delicate heart operation is 0.9.

What is the probability that exactly 5 of the next 7 patients having this operation survive?



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Discrete Probability Distribution:

3. A homeowner plants 6 bulbs selected at random from a box containing 5 tulip bulbs and 4 daffodil bulbs. What is the probability that he planted 2 daffodil bulbs and 4 tulip bulbs?

4. From a lot of 10 missiles, 4 are selected at random and fired. If the lot contains 3 defective missiles that will not fire, what is the probability that (a) all 4 will fire? (b) at most 2 will not fire?

5. The probability that a person living in a certain city owns a dog is estimated to be 0.3. Find the probability that the tenth person randomly interviewed in that city is the fifth one to own a dog. 6. The probability that a student pilot passes the written test for a private pilot's license is 0.7. Find the probability that a given student will pass the test?

(a) on the third try.

(b) before the fourth try.



Evaluation Criteria

- 80% overall solution structure.
- 5% Screenshots of all steps.
- 15% Apply methods of linear algebra.



Deadline

7/11/2024 at 11:59 am



Notes

- Submit your unique solution.
- Have fun and enjoy 😊.

