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The Negative Binomial Distribution - Quiz

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Question 1

1.0 point possible (graded)

Which of the following examples would be useful to model using the negative binomial distribution? (Select all that apply.)

- [ ] a. The number of shots that a basketball player makes out of the next 40 attempts
- [x] b. The number of times that you can operate a machine before there is an issue with the machine and the machine breaks down
- [x] c. The number of people that you would need to survey to reach a certain number of respondents that are male and above the age of 65.
- [x] d. The number of cards you sample from a deck of 52 before drawing an ace

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 2

0 points possible (ungraded)

Let's expand on the example described above of surveying homes to reach 100 males over the age of 65. Suppose that you know that in the population of interest, the probability that a home will have one male resident above the age of 65 is 15% or .15. (Assume that all homes either have 0 or 1 men over 65.) What is the expected number of homes you will need to visit before reaching 100 males above 65?

Please round your answer to the nearest whole number (no decimals).

567 ✔ **Answer:** 567

567

Explanation

The average number of homes that you will need to visit can be calculated as:

$$E[X] = 100(1-p)/p + 100 = 100/0.15 = 667.$$

- Exit Survey

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✔ Correct

Discussion
Topic: Module 6 / The Negative Binomial Distribution - Quiz

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