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Probabilities of draws with replacement

A fair die is rolled 6 times. What is the probability of having no 3 and no 6 among the rolls? Round your answer to three decimal places.

x

5

Sample space = $\{1, 2, 3, 4, 5, 6\}$

Event = $\{1, 2, 4, 5\}$

$$\left(\frac{4}{6}\right)^6$$

Probabilities of draws with replacement

A fair die is rolled 6 times. What is the probability that a 4 is obtained on at least one of the rolls? Round your answer to three decimal places.

x

5

↳ opposite of at least one is none

$$P(4 \text{ on one roll}) = \frac{1}{6}$$

How many times you get when rolled 6 times

0 ← what's probability that I get 0's 4 on 6 rolls

at least one 4 on the 6 rolls

$$= \left(\frac{5}{6}\right)^6$$
$$P(\text{at least one 4}) = 1 - \left(\frac{5}{6}\right)^6$$

Note: The Solve feature is not available to students

The thought process here is that since the opposite of at least one is none, you need to find out what the probability of NOT getting a 4 is and then take that number from 1 (or 100%).

Probability of draws with replacements



Watch on YouTube

Probabilities of draws with replacement

A fair die is rolled 6 times. What is the probability of having no 1 and no 3 among the rolls? Round your answer to three decimal places.

x

5

Sample space $\{1, 2, 3, 4, 5, 6\}$
event $\{2, 4, 5, 6\}$

$$\left(\frac{4}{6}\right)^6$$

(6)

$$\left(\frac{4}{6}\right)\left(\frac{4}{6}\right)\left(\frac{4}{6}\right)\left(\frac{4}{6}\right)\left(\frac{4}{6}\right)\left(\frac{4}{6}\right)$$

Probabilities of draws with replacement

A fair die is rolled 4 times. What is the probability that a 3 is obtained on at least one of the rolls? Round your answer to three decimal places.

at least one 3 out of 4 rolls

3 one rolls
3 two rolls
3 three rolls
3 four rolls

opposite of at least one? None

0 No 3 on 4 rolls
1
2
3
4 at least one 3 on 4 rolls

$\left(\frac{5}{6}\right)^4$ Probability Don't get a 3 on 4 rolls

$1 - \left(\frac{5}{6}\right)^4$

Note: The Solve feature is not available to students.

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#CountingAndProbability

#Probability

Problem Explanation

Show Another

Probabilities of draws with replacement

QUESTION

A fair die is rolled 4 times. What is the probability of having no 4 and no 6 among the rolls? Round your answer to three decimal places.

(If necessary, consult a list of formulas.)

Rolling a die, you could get 6 different options 1, 2, 3, 4, 5, 6
We are looking at getting no 4's and no 6's
that leaves us with 4 options 1, 2, 3, 5
Probability of getting those 4 out of the 6 total is $\frac{4}{6}$

Doing that 4 times

$$\frac{4}{6} \cdot \frac{4}{6} \cdot \frac{4}{6} \cdot \frac{4}{6} = \frac{4 \cdot 4 \cdot 4 \cdot 4}{6 \cdot 6 \cdot 6 \cdot 6} = \frac{256}{1296} = 0.19753086$$

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