LESSON MAKER PRO

Chance From Data

Use investigation results to find experimental probability.

GRADE 7 · 7.PS.1.b

7.PS.1.b "Given the results of a statistical investigation, determine the experimental probability of an event."

NAME _____ DATE _____

PROBABILITY FROM RESULTS

Experimental probability = number of times an event happened / total number of trials. Use results from an investigation, not what you think should happen. Simplify the fraction when possible.

WORKED EXAMPLE

A spinner landed on blue 13 times in 20 spins. What is the experimental probability of landing on blue?

1. Number of blue results = 13.
2. Total number of spins = 20.
3. Experimental probability = 13/20.
4. 13/20 cannot be simplified.

Answer: 13/20

PRACTICE 6 problems

1 In a snack survey, 9 out of 30 students choose fruit. What is the experimental probability that a student chooses fruit?

ANSWER _____

2 A player wins 7 out of 28 rounds of a game. What is the experimental probability of winning a round?

ANSWER _____

3 A digital prize wheel lands on a star 18 out of 45 spins. What is the experimental probability of landing on a star?

ANSWER _____

4 During 44 school days, it rains on 11 days. What is the experimental probability of a rainy school day?

ANSWER _____

5 A soccer player makes 16 out of 24 penalty kicks during practice. What is the experimental probability of making a penalty kick?

ANSWER _____

6 A marble is randomly selected from a bag and returned 32 times. A green marble is selected 5 times. What is the experimental probability of selecting green?

ANSWER _____

APPLY IT Show your work

1 At basketball practice, Jordan takes 36 free throws and makes 27. Based on this practice, what is the experimental probability that Jordan makes the next free throw?

WORK SPACE

ANSWER _____

2 A music club tracks 48 songs played from a shuffled playlist. Fourteen of the songs are by local artists. Based on the results, what is the experimental probability that the next song is by a local artist?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A robotics team tests a sensor in two rounds. In the first round, it correctly detects an object 8 times out of 15 tests. In the second round, it correctly detects an object 21 times out of 35 tests. What is the experimental probability that the sensor correctly detects an object across all the tests? Explain why you should combine the results instead of averaging the two fractions.

WORK SPACE AND ANSWER

ANSWER KEY

Chance From Data

GRADE 7 · 7.PS.1.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	In a snack survey, 9 out of 30 students choose fruit. What is the experimental probability that a student chooses fruit?	**3/10**
2	A player wins 7 out of 28 rounds of a game. What is the experimental probability of winning a round?	**1/4**
3	A digital prize wheel lands on a star 18 out of 45 spins. What is the experimental probability of landing on a star?	**2/5**
4	During 44 school days, it rains on 11 days. What is the experimental probability of a rainy school day?	**1/4**
5	A soccer player makes 16 out of 24 penalty kicks during practice. What is the experimental probability of making a penalty kick?	**2/3**
6	A marble is randomly selected from a bag and returned 32 times. A green marble is selected 5 times. What is the experimental probability of selecting green?	**5/32**

PART 2 · APPLY IT

1. **3/4** Use made shots over total shots: 27/36. Simplify by dividing both numbers by 9.
2. **7/24** Use local-artist songs over total songs: 14/48. Simplify by dividing both numbers by 2.

CHALLENGE

29/50. Combine the correct detections, 8 + 21 = 29, and combine the total tests, 15 + 35 = 50. The rounds have different numbers of tests, so the fractions should not be averaged.

Accept equivalent fractions and correct terminating decimals when applicable. For the challenge, students should combine both successful results and both total numbers of tests.