LESSON MAKER PRO

Chance Check

Experimental and theoretical probability practice

GRADE 7 · TEKS 7.6.I

7.6.I "determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces."

NAME _____ DATE _____

PROBABILITY PATHS

For theoretical probability, use favorable outcomes / total equally likely outcomes. For experimental probability, use event count / number of trials; for two events, multiply the probabilities and update the total after a draw without replacement.

WORKED EXAMPLE

A jar has 9 red tiles and 11 blue tiles. Find the theoretical probability of drawing a red tile.

1. Total tiles = 9 + 11 = 20.
2. Red tiles = 9.
3. P(red) = 9/20.

Answer: 9/20

PRACTICE 5 problems

1 A player won 7 of 12 games. Find the experimental probability of a win.

ANSWER _____

2 A spinner has 8 equal sections. Two sections are blue. Find P(blue).

ANSWER _____

3 Two coins are flipped. Find the theoretical probability of getting two heads.

ANSWER _____

4 A bag has 5 green and 8 orange beads. Find P(green, then orange) without replacement.

ANSWER _____

5 A number cube is rolled. Find P(number less than 3).

ANSWER _____

APPLY IT Show your work

1 In 18 free-throw attempts during practice, Jordan made 6 shots. Use experimental probability to find the probability Jordan makes the next shot.

WORK SPACE

ANSWER _____

2 Four band finalists are randomly assigned first and second performance spots. Find the probability that Kai performs first and Rina performs second.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A bag has 4 red, 6 blue, and 8 yellow beads. Two beads are drawn without replacement. Which is more likely: red then blue, or yellow then yellow? Show how you compare the probabilities.

WORK SPACE AND ANSWER

ANSWER KEY

Chance Check

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A player won 7 of 12 games. Find the experimental probability of a win.	**7/12**
2	A spinner has 8 equal sections. Two sections are blue. Find P(blue).	**1/4**
3	Two coins are flipped. Find the theoretical probability of getting two heads.	**1/4**
4	A bag has 5 green and 8 orange beads. Find P(green, then orange) without replacement.	**10/39**
5	A number cube is rolled. Find P(number less than 3).	**1/3**

PART 2 · APPLY IT

1. **1/3** Use made shots / total attempts: 6/18 = 1/3.
2. **1/12** There are 4 x 3 = 12 ordered assignments. Only one assignment has Kai first and Rina second.

CHALLENGE

Yellow then yellow. P(red then blue) = 4/18 x 6/17 = 4/51 = 12/153. P(yellow then yellow) = 8/18 x 7/17 = 28/153, and 28/153 > 12/153.

Accept equivalent fractions. For compound events without replacement, accept correct multiplication that uses the reduced total on the second draw.