LESSON MAKER PRO

Chance Mission

Use probability to predict what may happen.

GRADE 7 · TEKS 7.6.D

7.6.D "make predictions and determine solutions using theoretical probability for simple and compound events;"

NAME _____ DATE _____

FIND THE CHANCE

For equally likely outcomes, theoretical probability is favorable outcomes / total outcomes. For independent compound events, multiply the probability of each event. To predict a number of results, multiply the probability by the number of trials.

WORKED EXAMPLE

A bag has 13 teal marbles and 17 gray marbles. What is the theoretical probability of drawing a teal marble?

1. Find the total number of marbles: 13 + 17 = 30.
2. Count the favorable outcomes: 13 teal marbles.
3. Write the probability: 13/30.

Answer: 13/30

PRACTICE 6 problems

1 Roll a standard number cube. What is the probability of rolling a number less than 3?

ANSWER _____

2 A spinner has 4 equal sections. Three sections show music, and 1 section shows sports. What is the probability of landing on music?

ANSWER _____

3 A bag has 5 red marbles and 7 blue marbles. What is the probability of drawing a marble that is not red?

ANSWER _____

4 Flip a fair coin and roll a standard number cube. What is the probability of flipping heads and rolling a number greater than 4?

ANSWER _____

5 Flip 2 fair coins. What is the probability that both coins land on tails?

ANSWER _____

6 A fair spinner has 15 equal sections. Six sections say Win. If you spin it 20 times, how many wins should you predict?

ANSWER _____

APPLY IT Show your work

1 A music club raffle wheel has 12 equal sections. Five sections award a snack coupon, and the other sections award a sticker. If 24 students each spin once, how many snack coupons should the club predict giving out?

WORK SPACE

ANSWER _____

2 A gaming club app randomly chooses 1 of 4 maps and 1 of 6 game modes. Maya earns a bonus only if the app chooses Harbor map and Puzzle mode. What is the probability that she earns a bonus? If she plays 48 independent rounds, how many bonuses should she predict?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A video app has 4 comedy clips, 3 sports clips, and 5 science clips. It selects 2 clips without replacement. What is the probability that it selects a comedy clip first and a science clip second? Explain why the denominators change.

WORK SPACE AND ANSWER

ANSWER KEY

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Roll a standard number cube. What is the probability of rolling a number less than 3?	**1/3**
2	A spinner has 4 equal sections. Three sections show music, and 1 section shows sports. What is the probability of landing on music?	**3/4**
3	A bag has 5 red marbles and 7 blue marbles. What is the probability of drawing a marble that is not red?	**7/12**
4	Flip a fair coin and roll a standard number cube. What is the probability of flipping heads and rolling a number greater than 4?	**1/6**
5	Flip 2 fair coins. What is the probability that both coins land on tails?	**1/4**
6	A fair spinner has 15 equal sections. Six sections say Win. If you spin it 20 times, how many wins should you predict?	**8 wins**

PART 2 · APPLY IT

1. **10 snack coupons** The probability of a snack coupon is 5/12. Multiply 24 x 5/12 to predict 10 snack coupons.
2. **1/24; 2 bonuses** There is 1 successful map-mode pairing out of 4 x 6 = 24 possible pairings. Multiply 48 x 1/24 to predict 2 bonuses.

CHALLENGE

5/33. The probability is 4/12 x 5/11 = 5/33. After a comedy clip is selected, 11 clips remain, and 5 of them are science clips.

Accept equivalent fractions for probability answers. For prediction questions, accept the stated expected count and reasonable wording such as "about 8 wins."