LESSON MAKER PRO

Chance Check

Interpret and compare probabilities.

GRADE 7 · MA.7.DP.2.2

MA.7.DP.2.2 "Given the probability of a chance event, interpret the likelihood of it occurring. Compare the probabilities of chance events."

NAME _____ DATE _____

READING PROBABILITY

Probability is a number from 0 to 1. A probability of 0 is impossible, a probability of 1 is certain, and probabilities closer to 1 are more likely. To compare probabilities, rewrite them with a common denominator or as decimals.

WORKED EXAMPLE

A video playlist has 16 clips, and 11 are science clips. One clip is chosen at random. What is the probability of choosing a science clip, and how likely is it?

1. Favorable clips: 11.
2. Total clips: 16.
3. P(science clip) = 11/16.
4. Since 11/16 > 1/2, choosing a science clip is more likely than not.

Answer: 11/16, more likely than not

PRACTICE 6 problems

1 A calendar day has 24 hours. One hour is chosen at random. What is the probability that it is the hour beginning at 12:00 noon? Interpret the likelihood.

ANSWER _____

2 A bag has 9 yellow counters and 0 purple counters. What is the probability of choosing a purple counter? Interpret the likelihood.

ANSWER _____

3 A number cube is marked 1 through 6. What is the probability of rolling a number less than 6? Interpret the likelihood.

ANSWER _____

4 Event A has probability 3/8. Event B has probability 5/8. Which event is more likely, and by how much?

ANSWER _____

5 Event A has probability 2/3. Event B has probability 3/4. Which event is more likely?

ANSWER _____

6 The probability that a randomly selected video has captions is 0.45. Is this event likely or unlikely?

ANSWER _____

APPLY IT Show your work

1 At a school media fair, a prize wheel has 20 equal sections. Eight sections award sticker packs, and 5 sections award music-download coupons. Which prize is more likely, and by how much?

WORK SPACE

ANSWER _____

2 At basketball practice, Nia makes 24 of 32 free throws. Omar makes 18 of 30 free throws. Based on these results, whose experimental probability of making a free throw is greater, and by how much?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Bag A has 4 red beads and 5 blue beads. Bag B has 5 red beads and 7 blue beads. A bead will be chosen at random from one bag. Which bag gives a greater probability of choosing a red bead? Explain by comparing the fractions.

WORK SPACE AND ANSWER

ANSWER KEY

Chance Check

GRADE 7 · MA.7.DP.2.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A calendar day has 24 hours. One hour is chosen at random. What is the probability that it is the hour beginning at 12:00 noon? Interpret the likelihood.	**1/24, unlikely**
2	A bag has 9 yellow counters and 0 purple counters. What is the probability of choosing a purple counter? Interpret the likelihood.	**0, impossible**
3	A number cube is marked 1 through 6. What is the probability of rolling a number less than 6? Interpret the likelihood.	**5/6, likely**
4	Event A has probability 3/8. Event B has probability 5/8. Which event is more likely, and by how much?	**Event B, by 1/4**
5	Event A has probability 2/3. Event B has probability 3/4. Which event is more likely?	**Event B**
6	The probability that a randomly selected video has captions is 0.45. Is this event likely or unlikely?	**Unlikely**

PART 2 · APPLY IT

1. **A sticker pack is more likely by 3/20.** A sticker pack is more likely by 3/20. The probabilities are 8/20 = 2/5 for a sticker pack and 5/20 = 1/4 for a coupon. Subtract 8/20 - 5/20 to get 3/20.
2. **Nia's experimental probability is greater by 3/20.** Nia's experimental probability is greater by 3/20. Nia's probability is 24/32 = 3/4, and Omar's is 18/30 = 3/5. Subtract 3/4 - 3/5 = 3/20.

CHALLENGE

Bag A. P(red from A) = 4/9 = 16/36, and P(red from B) = 5/12 = 15/36. Since 16/36 > 15/36, Bag A has the greater probability.

Accept equivalent fractions and decimals when they are correct. For likelihood descriptions, accept equivalent wording such as "less likely than not" for unlikely and "more likely than not" for likely.