

Chance Scale

Find probabilities and describe how likely events are.

GRADE 7 • 7.SP.C.5

CCSS.Math.Content.7.SP.C.5 "Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event..."

NAME _____

DATE _____

THE BIG IDEA

Probability is a number from 0 to 1. Values near 0 are unlikely, values around $\frac{1}{2}$ are neither unlikely nor likely, and values near 1 are likely.

WORKED EXAMPLE

A music queue has 7 hip-hop tracks and 4 rock tracks. One track plays at random. Find $P(\text{hip-hop})$.

1. Total tracks: $7 + 4 = 11$.
2. Favorable tracks: 7.
3. $P(\text{hip-hop}) = 7/11$.
4. Since $7/11 > 1/2$, hip-hop is more likely than not.

Answer: $7/11$, more likely than not

PRACTICE 5 problems

- 1** A bag has 2 red, 6 blue, and 5 yellow tokens. One token is selected. Find $P(\text{red})$ and describe its likelihood.

ANSWER _____

- 2** A fair coin is flipped. Find $P(\text{tails})$ and describe its likelihood.

ANSWER _____

- 3** A jar holds 9 white beads and 1 black bead. Find $P(\text{white})$ and describe its likelihood.

ANSWER _____

- 4** A random digit is selected from 0 through 9. Find $P(\text{selecting } 0)$ and describe its likelihood.

ANSWER _____

- 5** A box holds 5 purple tickets and 5 orange tickets. Find $P(\text{purple})$ and describe its likelihood.

ANSWER _____

APPLY IT Show your work

- 1** At an esports club, 10 of 12 raffle cards offer a game-time pass. A card is drawn at random. What is $P(\text{pass})$? Is a pass likely?

WORK SPACE

ANSWER _____

- 2** At a talent show, 3 of 20 song-request slips ask for your favorite song. One slip is picked at random. What is $P(\text{your favorite song})$? Describe its likelihood.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Three online game reward packs contain collectible cards. Pack A has 2 rare and 8 common cards. Pack B has 5 rare and 10 common cards. Pack C has 1 rare and 9 common cards. Which pack gives the greatest chance of a rare card? Show the probability for each pack and explain.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A bag has 2 red, 6 blue, and 5 yellow tokens. One token is selected. Find $P(\text{red})$ and describe its likelihood.	2/13, unlikely
2	A fair coin is flipped. Find $P(\text{tails})$ and describe its likelihood.	1/2, neither unlikely nor likely
3	A jar holds 9 white beads and 1 black bead. Find $P(\text{white})$ and describe its likelihood.	9/10, likely
4	A random digit is selected from 0 through 9. Find $P(\text{selecting } 0)$ and describe its likelihood.	1/10, unlikely
5	A box holds 5 purple tickets and 5 orange tickets. Find $P(\text{purple})$ and describe its likelihood.	1/2, neither unlikely nor likely

PART 2 • APPLY IT

- 5/6, likely** There are 10 favorable cards out of 12 total cards. Simplify $10/12$ to $5/6$, which is near 1.
- 3/20, unlikely** There are 3 favorable slips out of 20 total slips. The probability $3/20$ is near 0.

CHALLENGE

Pack B. Pack A: 1/5, Pack B: 1/3, Pack C: 1/10. Since 1/3 is greater than 1/5 and 1/10, Pack B gives the greatest chance.

Accept equivalent fractions, such as $10/12$ for $5/6$. Accept likelihood descriptions that correctly connect probabilities near 0, $1/2$, and 1 to the stated categories.