Probability - Mutually Exclusive Events

Name

Score

Math Blast

MATH BLAST
PUBLISHING
— fun and interactive math for all. —

Determine if the events are mutually exclusive. Explain.

A standard six-sided die is rolled. What is the probability of rolling an even number or a 5?

- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

A bag contains 3 red marbles, 4 blue marbles, and 2 green marbles. If one marble is chosen at random, what is the probability of choosing a red marble or a green marble?
- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

In a deck of 52 playing cards, what is the probability of drawing a king or a queen?

- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

A spinner has sections labeled 1, 2, 3, 4, and 5. What is the probability of landing on an odd number or a number greater than 4?

- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

student is chosen randomly from a class. What is the probability that the student is a boy or wears glasses?

- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

You flip a coin. What is the probability of getting heads or tails?

- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

From a group of 10 students, 6 are taking art, 4 are taking music, and 2 are taking both. If a student is chosen at random, what is the probability that the student is taking art or music?
- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

A box contains cards numbered 1 to 10. What is the probability of drawing a card with an even number or a prime number?

- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

In a high school, 40% of students play a sport, 25% are in the band, and 10% do both. What is the probability that a randomly selected student plays a sport or is in the band?
- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

A person is randomly selected from a group of adults. What is the probability that the person is under 30 years old or over 60 years old?

- **Are the events mutually exclusive?** (Yes/No)

- **Answer:**

Determine if the events are mutually exclusive. Explai.

Are the events mutually exclusive? Yes

Answer: The even numbers are {2, 4, 6}. The number 5 is {5}. There is no overlap.

Are the events mutually exclusive? Yes

Answer: Choosing a red marble and choosing a green marble cannot happen at the same time.

Are the events mutually exclusive? Yes

Answer: A card cannot be both a king and a queen.

Are the events mutually exclusive? No

Answer: Odd numbers are {1, 3, 5}. Numbers greater than 4 are {5}. The number 5 is common.

Are the events mutually exclusive? No
Answer: A student can be both a boy and wear glasses. Since we don't have enough information to calculate the overlap (P(boy and wears glasses)), we cannot give a numerical probability. This question is designed to highlight the concept of non-mutually exclusive events.

Are the events mutually exclusive? Yes

Answer: A coin flip cannot result in both heads and tails simultaneously.

Are the events mutually exclusive? No

Answer: Students can be taking both art and music.

Are the events mutually exclusive? No

Answer: Even numbers are {2, 4, 6, 8, 10}. Prime numbers are {2, 3, 5, 7}. The number 2 is common.

Are the events mutually exclusive? No

Answer: Some students do both.

Are the events mutually exclusive? Yes

Answer: A person cannot be both under 30 and over 60 at the same time. We don't have specific probabilities for each age group, but the events themselves are mutually exclusive.