



Probabilities of compound events

GRADE 7 MATH

Name _____

Date _____

Work in order. Write both fractions before multiplying. Say whether the first event changes the second.
Bag: 3 red, 2 blue. One skill: **compound events**.

WORKED EXAMPLE

Multiply the probabilities. Ask first: does the first event **change** the second? Independent events (coins, dice, with replacement) leave it unchanged. Without replacement, **both** the numerator and the denominator drop.

1. Two fair coins are flipped. Find $P(\text{both tails})$.

FLUENCY

Show your thinking

Answer

2. Find $P(\text{at least one head})$ for those two coins.

REASONING

Show your thinking

Answer

3. A die is rolled and a coin flipped. Find $P(\text{even number and tails})$.

APPLICATION

Show your thinking

Answer

4. From the bag, two marbles are drawn WITH replacement. Find $P(\text{both blue})$.

APPLICATION

Show your thinking

Answer

5. Now two are drawn WITHOUT replacement. Find $P(\text{both blue})$.

APPLICATION

Show your thinking

Answer

6. Compare your answers to questions 4 and 5. Which is smaller, and why does that make sense?

REASONING

Show your thinking

Answer

7. Without replacement, find $P(\text{red first, then blue})$.

APPLICATION

Show your thinking

Answer

8. Without replacement, find $P(\text{blue first, then red})$.

APPLICATION

Show your thinking

Answer

9. Your last two answers are equal. Explain why, given that the fractions you multiplied were different.

REASONING

Show your thinking

Answer