

Grade 7 · Probability of Compound Events · Quiz

Common Core 7.SP.C.8 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

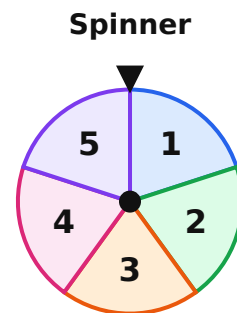
Answer these ten multiple-choice questions on compound events. Each has one correct answer. Count outcomes carefully, decide whether the draws are with or without replacement, and check each probability against the full sample space before choosing.

Grade 7 Common Core: 7.SP.C.8

Questions

Question 1

A fair coin is flipped and the spinner is spun. How many outcomes are in the sample space?

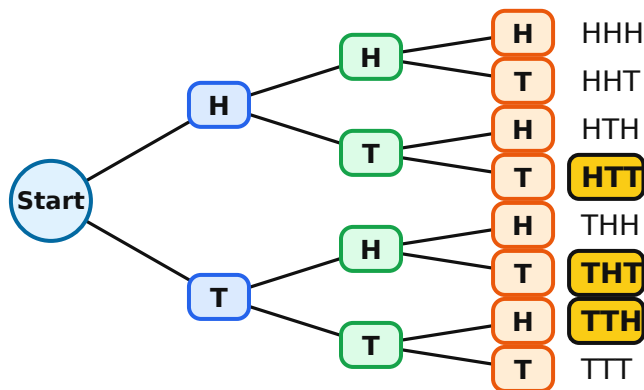


Five equal sections.

- A. 7
- B. 10
- C. 5
- D. 25

Question 2

A fair coin is flipped three times. What is the probability of exactly one head?



Three flips, eight outcomes.

- A. $\frac{3}{8}$
- B. $\frac{1}{8}$
- C. $\frac{1}{4}$
- D. $\frac{1}{2}$

Question 3

Two fair number cubes are rolled. What is the probability that both show the same number?

- A. $\frac{1}{36}$
- B. $\frac{1}{12}$
- C. $\frac{1}{6}$
- D. $\frac{1}{3}$

Question 4

Two fair number cubes are rolled and added. Use the table. What is the probability of a sum of 9?

Cube 2						
Cube 1	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

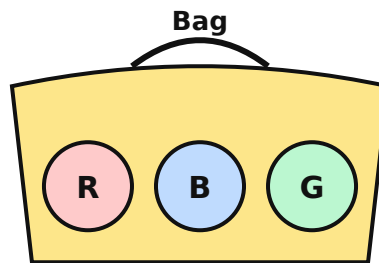
Sums of two number cubes.

- A. $\frac{1}{12}$
- B. $\frac{1}{4}$

- C. $\frac{1}{9}$
- D. $\frac{1}{36}$

Question 5

A bag holds a red, a blue and a green marble. Two marbles are drawn without replacement. What is the probability of red first and then blue?



One marble of each color.

- A. $\frac{1}{18}$
- B. $\frac{1}{9}$
- C. $\frac{1}{6}$
- D. $\frac{1}{3}$

Question 6

A store sells shirts in 4 colors and pants in 3 styles. How many different outfits of one shirt and one pair of pants are possible?

- A. 12
- B. 7
- C. 9
- D. 24

Question 7

A spinner has three equal sections: red, green, blue. Which plan correctly simulates two spins?

- A. Roll a number cube twice; 1 or 2 is red, 3 or 4 is green, 5 or 6 is blue
- B. Roll a number cube twice; 1 is red, 2 is green, 3 to 6 is blue
- C. Flip a coin twice; heads is red and tails is green
- D. Roll a number cube once; 1 to 3 is red and 4 to 6 is blue

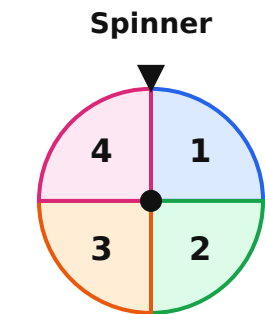
Question 8

Two fair coins are flipped. What is the probability of at least one head?

- A. $\frac{1}{4}$
- B. $\frac{3}{4}$
- C. $\frac{1}{2}$
- D. $\frac{3}{8}$

Question 9

Aisha spins the spinner and flips a coin, 240 times. About how many times should she expect heads and a 4?

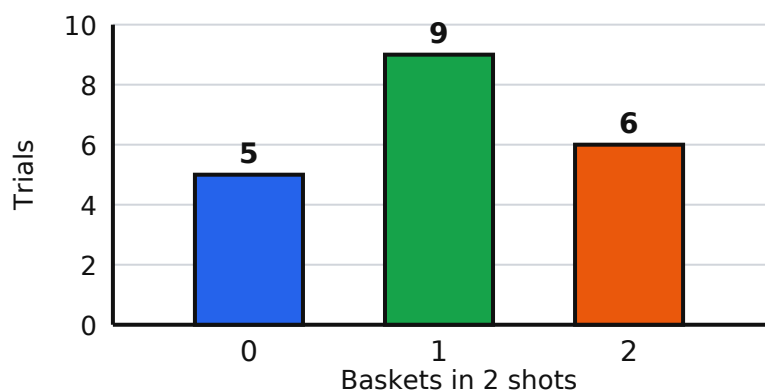


Four equal sections.

- A. 120
- B. 60
- C. 40
- D. 30

Question 10

In a simulation of two free throws, the bars show the number of baskets in each of 20 trials. Based on this simulation, what is the probability of making at least one basket?



Results of 20 simulated trials.

- A. 25%
- B. 45%
- C. 30%
- D. 75%

Answer key

1. **B** - Multiply the choices: $2 \times 5 = 10$. Adding them to get 7 is the typical mistake.
2. **A** - Three of the 8 outcomes (HTT, THT, TTH) have one head, so $\frac{3}{8}$. Counting only the number of heads (0, 1, 2, 3) wrongly gives $\frac{1}{4}$.
3. **C** - Six of the 36 outcomes are doubles, so $\frac{6}{36} = \frac{1}{6}$. $\frac{1}{36}$ counts only one double.
4. **C** - Four cells show 9, so $\frac{4}{36} = \frac{1}{9}$. Counting only one cell gives the mistaken $\frac{1}{36}$.
5. **D** - There are $3 \times 2 = 6$ ordered pairs and only RB matches, so $\frac{1}{6}$. $\frac{1}{9}$ uses 9 outcomes, which is correct only with replacement.
6. **A** - Multiply the choices: $4 \times 3 = 12$. Adding gives 7.
7. **A** - Each color needs the same chance, so two numbers of six go to each color, and two spins need two rolls. The other plans give unequal chances or the wrong number of stages.
8. **B** - HH, HT and TH have a head, so $\frac{3}{4}$. $\frac{1}{2}$ counts only exactly one head.
9. **D** - The probability is $\frac{1}{8}$, and $\frac{1}{8} \times 240 = 30$. Using $\frac{1}{2}$ (heads only) gives 120.
10. **D** - Trials with at least one basket: $9 + 6 = 15$, and $\frac{15}{20} = 75\%$. The 25% is the share with no baskets.

Remember:

- Standard 7.SP.C.8: find probabilities of compound events using lists, tables, tree diagrams and simulation.
- A tree diagram shows every outcome as one path: a coin and a spinner with 3 equal sections give $2 \times 3 = 6$ outcomes.
- Two number cubes have 36 equally likely outcomes, and 6 of them give a sum of 7.
- Drawing without replacement leaves fewer choices on the second draw than drawing with replacement.
- A simulation gives an estimate that gets closer to the true probability as the number of trials grows.