

Grade 7 - Compound Events and Simulations - Worksheet

Common Core 7.SP.C.8 · maths-pdf.fr/en/

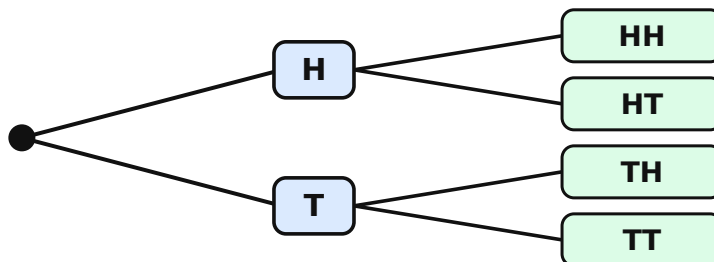
Name: _____ Class: _____ Date: ____/____/____

These 20 problems practice the probability of compound events using organized lists, tables, tree diagrams, and simulations (Common Core 7.SP.C.8). They start with the basic skill, move to different kinds of numbers and multistep work, and end with six word problems set in everyday situations such as shopping, sports, and travel.

Show every step of your work, and use the answer key only after you have tried each problem.

Grade 7 · Common Core State Standards: **7.SP.C.8**

Exercise 1 - Two coin tosses



Two tosses.

List the sample space for tossing a coin twice.

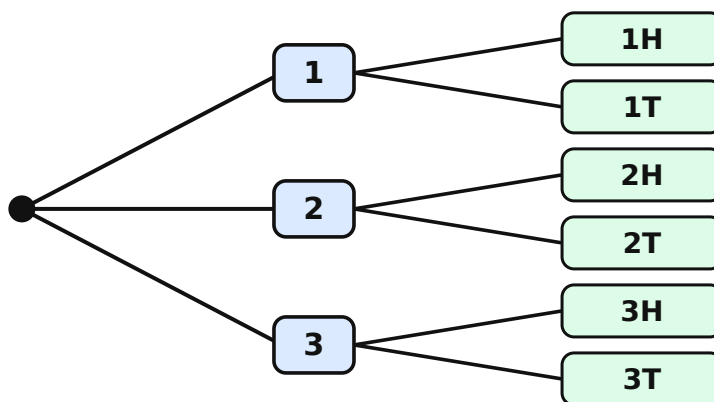
Exercise 2 - Two heads

Find the probability of getting two heads in two tosses of a fair coin.

Exercise 3 - At least one head

Find the probability of at least one head in two tosses.

Exercise 4 - Spinner and coin



A spinner and a coin.

A spinner has sections 1, 2, 3 and a coin is tossed. List all outcomes and find $P(2 \text{ and tails})$.

Exercise 5 - Sum of 7

+	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 dice.

Two fair dice are rolled. Find $P(\text{sum is } 7)$.

Exercise 6 - Large sums

Two fair dice are rolled. Find $P(\text{sum is } 11 \text{ or } 12)$.

Exercise 7 - Doubles

Two fair dice are rolled. Find $P(\text{doubles})$, meaning both dice show the same number.

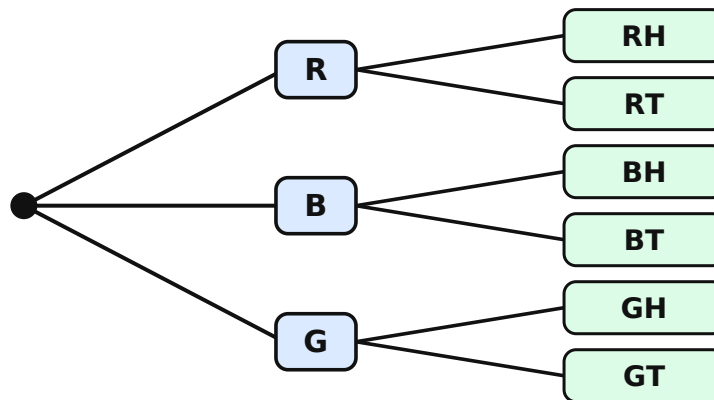
Exercise 8 - Outfits

Shirt \ Pants	Jeans	Shorts
Red	R-J	R-S
Blue	B-J	B-S
Green	G-J	G-S

Outfit choices.

Priya has 3 shirts and 2 pairs of pants. How many outfits are possible? If she picks at random, find the probability of red shirt with shorts.

Exercise 9 - Tree diagram



A spinner and a coin.

A spinner has red, blue, and green sections and a coin is tossed. How many outcomes does the tree show? Find $P(\text{blue and heads})$.

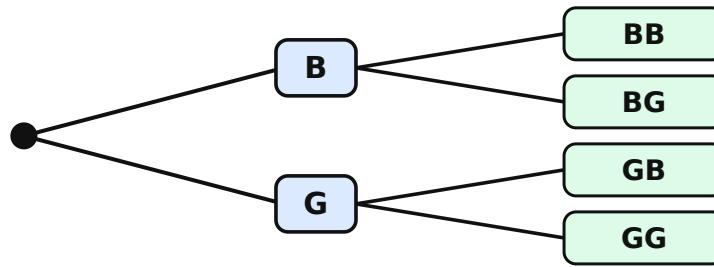
Exercise 10 - With replacement

A bag has 2 red marbles and 1 blue marble. Liam draws one marble, replaces it, and draws again. Find $P(\text{both red})$.

Exercise 11 - Without replacement

The same bag (2 red, 1 blue) is used, but the first marble is not replaced. Find $P(\text{both red})$.

Exercise 12 - Three children



The first two children.

A family has three children. Assume boys and girls are equally likely. List the sample space and find $P(\text{exactly two girls})$.

Exercise 13 - Design a simulation

A basketball player makes 60% of free throws. Describe how to use random digits 0 to 9 to simulate two shots.

Exercise 14 - Simulation results

Using digits 0 to 5 for a made shot, these ten pairs of digits were generated: 72, 14, 39, 85, 02, 51, 64, 26, 90, 33. Find the experimental probability that both shots are made, and compare with the theoretical value $0.6 \times 0.6 = 0.36$.

Exercise 15 - Lunch combos

A cafeteria meal has 4 sandwiches, 3 drinks, and 2 sides. How many different meals are possible? What is the probability that a random meal is a turkey sandwich with juice and fruit?

Exercise 16 - Passwords

A password has two letters, each chosen from A, B, C (repeats allowed). List all passwords and find $P(\text{both letters are the same})$.

Exercise 17 - Carnival game

A carnival game uses two spinners, each numbered 1 to 4. Find the probability that the sum is at least 6.

Exercise 18 - Even product

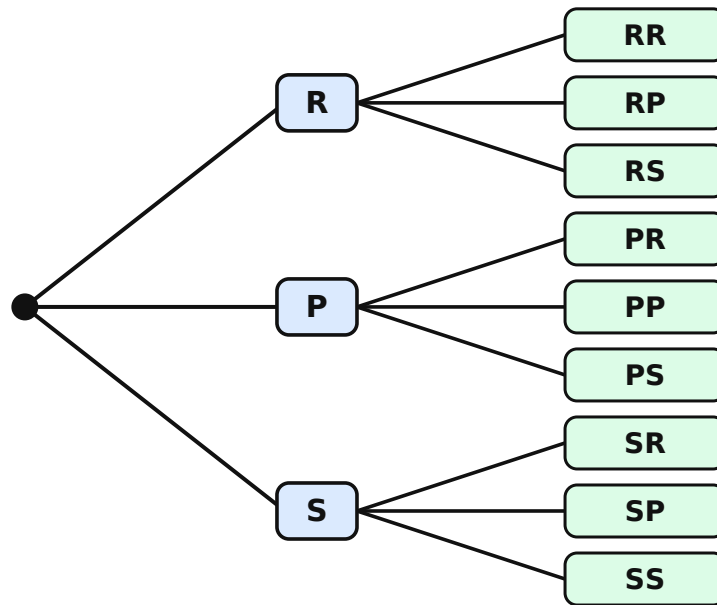
Two dice are rolled. Find $P(\text{the product is even})$. Hint: count the outcomes where both dice are odd.

Exercise 19 - Weather days

The chance of rain is 0.5 each day. Describe a simulation of a 3-day weekend, using coin

tosses, and list the outcomes in which it rains on exactly two days.

Exercise 20 - Rock, paper, scissors



Two players' choices.

Diego and Aisha each choose rock (R), paper (P), or scissors (S) at random. How many outcomes are there? Find $P(\text{tie})$.