

Grade 7 - Compound Events and Simulations - Answer Key

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

Use this answer key to check your work on the compound events worksheet. Every solution shows the steps, and the final answer appears in bold. If your answer is different, compare each step and look for the first place where the work changes.

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

Exercise 1 - Two coin tosses

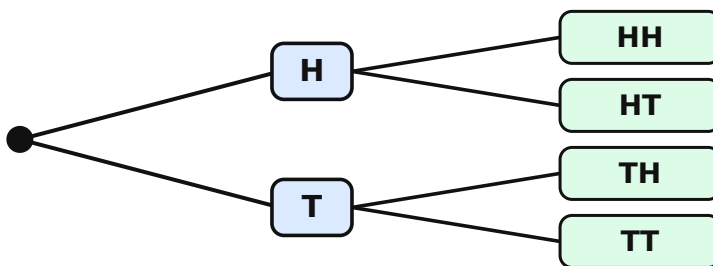
First toss H or T, then second toss H or T.

HH, HT, TH, TT

Exercise 2 - Two heads

1 favorable outcome (HH) out of 4.

$$\frac{1}{4}$$



Only HH has two heads.

Exercise 3 - At least one head

Favorable outcomes: HH, HT, TH, which is 3 of 4.

$$\frac{3}{4}$$

Exercise 4 - Spinner and coin

Outcomes: 1H, 1T, 2H, 2T, 3H, 3T, which is $3 \times 2 = 6$.

$$P(2 \text{ and tails}) = \frac{1}{6}$$

6 outcomes; $\frac{1}{6}$

Exercise 5 - Sum of 7

The sum 7 occurs 6 times among 36 outcomes.

$$\frac{6}{36} = \frac{1}{6}$$

$$\frac{1}{6}$$

Exercise 6 - Large sums

Sum 11: (5, 6), (6, 5). Sum 12: (6, 6). That is 3 outcomes.

$$\frac{3}{36} = \frac{1}{12}$$

$$\frac{1}{12}$$

Exercise 7 - Doubles

Doubles: (1,1), (2,2), ..., (6,6), which is 6 outcomes of 36.

$$\frac{6}{36} = \frac{1}{6}$$

$$\frac{1}{6}$$

Exercise 8 - Outfits

$3 \times 2 = 6$ outfits.

One favorable outcome: $\frac{1}{6}$

6 outfits; $\frac{1}{6}$

Exercise 9 - Tree diagram

Leaves: $3 \times 2 = 6$.

$$P(\text{blue, heads}) = \frac{1}{6}$$

6 outcomes; $\frac{1}{6}$

Exercise 10 - With replacement

$P(\text{red}) = \frac{2}{3}$ each time.

$$\frac{2}{3} \times \frac{2}{3} = \frac{4}{9}$$

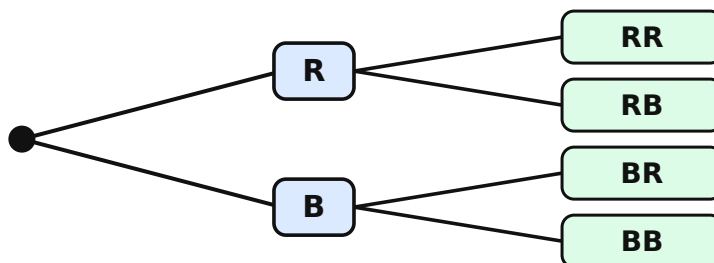
$$\frac{4}{9}$$

Exercise 11 - Without replacement

First red: $\frac{2}{3}$. Then 1 red of 2 marbles remains: $\frac{1}{2}$.

$$\frac{2}{3} \times \frac{1}{2} = \frac{1}{3}$$

$$\frac{1}{3}$$



The tree for two draws.

Exercise 12 - Three children

Outcomes: BBB, BBG, BGB, BGG, GBB, GBG, GGB, GGG (8 in all).

Exactly two girls: BGG, GBG, GGB, which is 3 outcomes.

$$\frac{3}{8}$$

Exercise 13 - Design a simulation

Let the digits 0, 1, 2, 3, 4, 5 mean a made shot (6 digits of 10 = 60%).

Let 6, 7, 8, 9 mean a miss.

Read two digits at a time; each pair is one trial of two shots.

Digits 0 to 5 = made; 6 to 9 = missed

Exercise 14 - Simulation results

Pairs with both digits 0 to 5: 14, 02, 51, 33, which is 4 of 10.

Experimental: $\frac{4}{10} = 0.4$, close to 0.36.

0.4 versus 0.36

Exercise 15 - Lunch combos

$4 \times 3 \times 2 = 24$ meals.

One favorable meal: $\frac{1}{24}$

24 meals; $\frac{1}{24}$

Exercise 16 - Passwords

AA, AB, AC, BA, BB, BC, CA, CB, CC (9 passwords).

Same letters: AA, BB, CC, which is 3 of 9.

$\frac{3}{9} = \frac{1}{3}$

$\frac{1}{3}$

Exercise 17 - Carnival game

Total outcomes: $4 \times 4 = 16$.

Sum 6: (2,4), (3,3), (4,2). Sum 7: (3,4), (4,3). Sum 8: (4,4). That is 6 outcomes.

$$\frac{6}{16} = \frac{3}{8}$$

$$\frac{3}{8}$$

Sum	Outcomes
6	3
7	2
8	1
Total	6

Counting favorable outcomes.

Exercise 18 - Even product

Both odd: $3 \times 3 = 9$ outcomes.

Even product: $36 - 9 = 27$ outcomes.

$$\frac{27}{36} = \frac{3}{4}$$

$$\frac{3}{4}$$

Exercise 19 - Weather days

Toss a coin 3 times; heads means rain.

Outcomes with exactly two heads: HHT, HTH, THH.

HHT, HTH, THH (3 of 8)

Exercise 20 - Rock, paper, scissors

$3 \times 3 = 9$ outcomes.

Ties: RR, PP, SS, which is 3 of 9.

$$\frac{3}{9} = \frac{1}{3}$$

9 outcomes; $\frac{1}{3}$