

1. What is the probability of an impossible event?

2. The probability of rolling a six is $\frac{1}{6}$. How many sixes are expected in 300 rolls?

3. For two independent events both happening (AND), you:
☐ multiply the probabilities
☐ add the probabilities
☐ subtract them
☐ take the larger one
4. Of 18 French students, 7 also study German. $P(\text{German} \mid \text{French}) = \frac{7}{a}$. What is a ?

5. A bag has 3 red and 5 blue counters. $P(\text{not red}) = \frac{a}{8}$. What is a ?

6. Relative frequency is calculated as:
☐ $(\text{times it happened}) \div (\text{total trials})$
☐ $(\text{total trials}) \div (\text{times it happened})$
☐ $\text{times it happened} \times \text{total trials}$
☐ always $\frac{1}{2}$
7. On the 6 by 6 grid of two dice (36 cells), how many cells give a total of 7?

8. Conditional probability is the probability of an event:
☐ given that another event has already happened
☐ that is impossible
☐ on a scale from 1 to 10
☐ multiplied by 100
9. A certain event has probability 100.
☐ True ☐ False

10. Relative frequency becomes a better estimate as the number of trials increases.

☐ True ☐ False

1. **0**

Impossible events have probability 0; certain events have probability 1.

2. **50**

$$(1/6) \times 300 = 50.$$

3. **multiply the probabilities**

$P(A \text{ and } B) = P(A) \times P(B)$ for independent events.

4. **18**

Given they are French, the total to divide by is the 18 French students.

5. **5**

$$P(\text{red}) = 3/8, \text{ so } P(\text{not red}) = 1 - 3/8 = 5/8; a = 5.$$

6. **(times it happened) $\div$ (total trials)**

Relative frequency = successes $\div$ number of trials.

7. **6**

$$1+6, 2+5, 3+4, 4+3, 5+2, 6+1 \text{ — six cells, so } P(7) = 6/36 = 1/6.$$

8. **given that another event has already happened**

It is the probability of B given that A has occurred.

9. **False**

A certain event has probability 1 (or 100%), not 100. Probability is between 0 and 1.

10. **True**

More trials $\rightarrow$ the relative frequency converges to the true probability.