8. Probability

Starter Quiz ·

IGCSE Mathematics Name: _____ Score: _____

1. What is the probability of an impossible event?

   _____

2. The probability of rolling a six is 1/6. How many sixes are expected in 300 rolls?

   _____

3. For two independent events both happening (AND), you:

   ☐ take the larger one

   ☐ subtract them

   ☐ add the probabilities

   ☐ multiply the probabilities

4. In a class of 30, 18 students study French and 7 of these also study German. A French student is chosen at random. The probability they study German is 7/a. What is a?

   _____

5. A counter is chosen at random from 3 red and 5 blue counters, each equally likely. The probability of not red is a/8. Find a.

   _____

6. Relative frequency is calculated as:

   ☐ always 1/2

   ☐ (total trials) ÷ (times it happened)

   ☐ (times it happened) ÷ (total trials)

   ☐ times it happened × total trials

7. Two independent fair six-sided dice are rolled. How many ordered pairs total 7?

   _____

8. A student is selected at random from the school orchestra. Which total is used for the chance that they play violin?

   ☐ All orchestra members

   ☐ Everyone in the school

   ☐ All violin players in the school

9. A certain event has probability 100.

   ☐ True ☐ False

10. Under unchanged conditions, increasing the number of comparable trials usually gives a more reliable probability estimate.

    ☐ True ☐ False

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Answers ·

IGCSE Mathematics

1. **0**

   Impossible has probability 0; certain has probability 1.

2. **50**

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

3. **multiply the probabilities**

   Independence permits P(A and B) = P(A) × P(B).

4. **18**

   The condition selects the 18 French students.

5. **5**

   All 5 blue counters count as not red.

6. **(times it happened) ÷ (total trials)**

   Relative frequency = successes ÷ number of trials.

7. **6**

   The pairs are (1,6), (2,5), (3,4), (4,3), (5,2), (6,1).

8. **All orchestra members**

   Only orchestra members can be selected.

9. **False**

   The probability is 1, which is 100%, not 100.

10. **True**

    Larger comparable experiments usually reduce chance variation in the proportion, but each added trial need not move the estimate closer.