

Basic Probability



Use a sample space to find a basic probability: favourable outcomes over total outcomes.

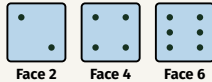
Name _____

Date _____

Show your method

$P(\text{event}) = \frac{\text{favourable outcomes}}{\text{total outcomes}}$. A probability is always between 0 (impossible) and 1 (certain).

Worked example A fair 6-sided die is rolled. Find $P(\text{rolling an even number})$.



Favourable outcomes: 2, 4, 6 (there are 3).

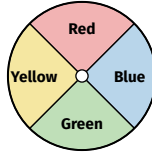
Total outcomes: 6.

$$P(\text{even}) = \frac{3}{6} = \frac{1}{2}$$

1. A fair die is rolled. What is $P(\text{rolling this number})$?



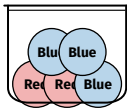
2. This spinner has 4 equal sections. What is $P(\text{red})$?



3. A card is drawn from a shuffled deck, then returned before the next draw. What is $P(\text{drawing a King})$?



4. This bag has 2 red and 3 blue counters. What is $P(\text{blue})$?



5. A spinner has 6 equal sections. What is $P(\text{landing on any particular section})$?

6. State the probability value that means an event is Impossible.

7. A fair coin is flipped twice. List the sample space (all 4 outcomes).

8. Using your sample space from Question 7, find $P(\text{both flips land the same})$.

9. Express $P = \frac{3}{4}$ as a decimal and a percentage.

Basic Probability (continued)



Apply theoretical probability, complements, and combined events.

Name _____

Date _____

10. A die is rolled 30 times. Theoretically, how many times would you expect a 1?

11. A bag has 12 counters: 5 red, 4 blue, 3 green. Find $P(\text{not red})$.

12. Explain the difference between theoretical and experimental probability.

13. A weather forecast says $P(\text{rain tomorrow}) = 0.15$. Describe this using everyday likelihood language.

14. Two mutually exclusive events have $P(A) = 0.4$ and $P(B) = 0.25$. Find $P(A \text{ or } B)$.

15. A die is rolled and a coin flipped. Find $P(\text{rolling a 3 AND flipping tails})$.

16. A probability is calculated as -0.2 . Explain why this must be wrong.

17. A spinner has $P(\text{red}) = 0.6$. What is $P(\text{not red})$?

18. A card is drawn from a standard deck. Find $P(\text{a Queen or a Jack})$.
