Probabilities of combined outcomes

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. A fair coin and standard die are independent. Find P(head and die greater than 4). [2 marks]

1/2×2/6=1/6.

Answer: 1/6.

2. A bag has 2 red and 3 blue tokens. Draw at random and replace the token before a second random draw. Find P(two red). [2 marks]

2/5×2/5=4/25.

Answer: 4/25.

3. Find P(two heads or two tails) for two independent fair coins. [2 marks]

HH or TT gives 2 of 4 outcomes.

Answer: 1/2.

4. Two independent fair spinners each show 1,2,3. Find P(sum 4). [3 marks]

Favourable pairs (1,3),(2,2),(3,1) give 3 of 9.

Answer: 1/3.

5. Find P(even or greater than 4) for a fair standard die. [2 marks]

Outcomes {2,4,5,6} give 4/6.

Answer: 2/3.

6. A bag has B1, B2 and G. Draw two tokens at random without replacement. Find P(both blue). [3 marks]

Favourable pairs B1B2 and B2B1 give 2 of 6.

Answer: 1/3.