# Probability

Grade 2 topic · Foundation and Higher · Edexcel and AQA

**How to use this pack**
20 questions that get harder as you go. Foundation students: aim for Questions 1–15 (30 marks) and have a go at the rest. Higher students: complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 50 marks.

## Warm-up

**1** A bag contains 3 red, 8 blue and 1 green counters. One counter is taken at random. Write down the probability that it is red. **[1 mark]**

**Answer** _____

**2** A fair six-sided dice is rolled. Write down the probability of getting a 5. **[1 mark]**

**Answer** _____

**3** A bag contains 8 red, 4 blue and 1 green counters. One counter is taken at random. What is the probability that it is blue? **[1 mark]**

**Answer** _____

**4** A fair coin is flipped. What is the probability of getting tails? **[1 mark]**

**Answer** _____

**5** A fair six-sided dice is rolled. What is the probability of getting an even number? **[1 mark]**

**Answer** _____

## Core

**6** A bag contains 6 red, 8 blue and 1 green counters. Work out the probability of picking a counter that is not red. **[2 marks]**

**Answer** _____

**7** The probability that it rains tomorrow is 0.2. What is the probability that it does not rain? **[2 marks]**

**Answer** _____

**8** A fair six-sided dice is rolled. What is the probability of a number greater than 4? **[2 marks]**

**Answer** _____

**9** A spinner has 8 equal sections numbered 1 to 8. What is the probability of landing on a prime number? **[2 marks]**

**Answer** _____

**10** A fair dice is rolled 120 times. How many times would you expect to roll a 6? **[2 marks]**

**Answer** _____

## Stretch

**11** The probabilities of a spinner landing on red, blue or green are 0.15, 0.35 and p. Work out p. **[3 marks]**

**Answer** _____

**12** In an experiment a drawing pin landed point up 43 times out of 100. Estimate the probability that it lands point up. **[3 marks]**

**Answer** _____

**13** Two fair coins are flipped. List all the possible outcomes. **[3 marks]**

**Answer** _____

**14** Two fair coins are flipped. What is the probability of getting two heads? **[3 marks]**

**Answer** _____

**15** The probability that a bus is late is 0.4. In 200 journeys, how many times would you expect it to be late? **[3 marks]**

**Answer** _____

## Challenge

**16** Two fair dice are rolled and their scores are added. What is the probability that the total is 7? **[4 marks]**

**Answer** _____

**17** A and B are mutually exclusive events with P(A) = 0.25 and P(B) = 0.4. Work out P(A or B). **[3 marks]**

**Answer** _____

**18** Two fair dice are rolled. What is the probability that both show an even number? **[4 marks]**

Answer _____

**19** Two fair dice are rolled and their scores are multiplied. What is the probability that the product is 12? **[4 marks]**

Answer _____

**20** A bag has 2 red and 4 blue counters. One counter is taken and not replaced, then a second is taken. Work out the probability that both are red. **[5 marks]**

Answer _____