Max’s Probability Puzzles

Learning objective: To calculate the probability of independent events and express them as fractions, decimals, and percentages.

Help Max the monkey solve these probability puzzles! Read each question carefully and write your answer clearly. Remember to simplify your fractions where possible.

Answer Key: 1. A (1/6); 2. True; 3. Impossible; 4. B (0.5); 5. 1/2 or 50%; 6. False; 7. 1/4; 8. Certain; 9. 1/10; 10. 1/2. Explanations: Probability is the measure of how likely an event is to occur. It can be written as a fraction, decimal, or percentage. An event with a probability of 0 is impossible, while a probability of 1 is certain.

Word bank: Probability · Outcome · Likely · Unlikely · Certain · Impossible · Chance · Fraction · Percentage · Event

1. Max rolls a fair, standard 6-sided dice. What is the probability of rolling a 4? A) 1/6 * B) 1/4 C) 1/2 D) 1 (1 mark)

2. True or False: If you flip a fair coin, the probability of getting heads is 0.5. (1 mark)

3. A bag contains only blue marbles. What is the probability of picking a red marble? (1 mark)

4. If an event has an equal chance of happening or not happening, what is the probability? A) 0 B) 0.5 * C) 1 D) 0.75 (1 mark)

5. There are 10 socks in a drawer: 5 are black and 5 are white. What is the probability of picking a black sock as a fraction? (1 mark)

6. True or False: It is impossible to have a probability of 1.2. (1 mark)

7. Zara has a spinner with 4 equal sections: red, blue, green, and yellow. What is the probability of landing on red? (1 mark)

8. If you have a bag with 10 red counters and you pick one, the event is _____. (1 mark)

9. There are 20 cards numbered 1 to 20. What is the probability of picking the number 7? (1 mark)

10. Max has 4 coins in his pocket: 2 are worth £1 and 2 are worth 50p. What is the probability of picking a £1 coin? (1 mark)

Draw: Draw a spinner divided into 8 equal sections, with 4 sections coloured blue, 2 sections coloured red, and 2 sections coloured yellow. Label the probability of landing on each colour as a fraction.

Extension challenge: Max has a bag containing 3 red sweets, 2 green sweets, and 5 yellow sweets. If he eats one red sweet, what is the new probability of picking a red sweet from the remaining collection? Explain your reasoning.