Year 8 · Probability: Working Out the Chances

Name: _____ Date: _____

Hi! This sheet helps you practise theoretical probability, working out how likely something is when all outcomes are equally likely. You'll write answers as fractions, decimals and percentages, compare events, and use complements. Have your working handy!

Warm-up

1. A fair six-sided dice is rolled once. What is the probability of rolling a 4? Give your answer as a fraction.

2. A spinner has 5 equal sections coloured red, blue, blue, green and yellow. What is the probability of landing on blue? Give your answer as a fraction and a decimal.

3. A single card is drawn from a standard 52-card deck. What is the probability it is a heart? Give your answer as a fraction.

4. The probability that it rains on Saturday in Avondale is 0.35. What is the probability that it does NOT rain?

Practice

5. A bag holds 20 marbles: 8 red, 7 blue and 5 green. One marble is taken at random. Find P(red) as a fraction, a decimal and a percentage.

6. Using the same bag of 20 marbles (8 red, 7 blue, 5 green), which is more likely: drawing a blue marble or drawing a green marble? Explain using probabilities.

7. A dice is rolled once. Find the probability of rolling a number greater than 4. Then find the probability of NOT rolling a number greater than 4.

8. Mereana spins a spinner with 8 equal sections numbered 1 to 8. What is the probability she spins an even number? Give your answer as a fraction and a percentage.

9. At the Avondale market, a raffle has 200 tickets. Tama buys 15 tickets. If one winning ticket is drawn at random, what is the probability Tama wins? Give your answer as a fraction and a decimal.

10. A pencil case contains 12 pens: 3 black, 4 blue, 2 red and 3 green. Aroha takes one pen without looking. Find P(black or red). Then find the probability she picks a pen that is neither black nor red.

Challenge

11. Two fair coins are tossed together. List all possible outcomes, then find the probability of getting exactly one head. Give your answer as a fraction and a percentage.

12. Two fair six-sided dice are rolled and the numbers are added. Use a table of all 36 outcomes to find the probability the total is 7. Then find the probability the total is NOT 7.