Chapter 1 Test Yourself

✓ Achievement Chart

Category	Knowledge/ Understanding	Thinking	Communication	Application
Questions	1, 2, 3	6, 10	5, 7	4, 8, 9

Multiple Choice

Choose the best answer for #1 to #3.

1. A married couple decides to have two children. Assuming that they do, what is the probability that they will either have two boys or two girls?

   A 0.125 **B** 0.25
   C 0.5 **D** $0.\overline{6}$

2. Natalie logged on to a social media website 50 times. Fifteen of those times she encountered a pop-up advertisement. What is the experimental probability that Natalie will see a pop-up at this site?

   A 7.5% **B** 15%
   C 30% **D** 70%

3. This spinner is spun 20 times and lands on green 5 times. Identify the true statement.

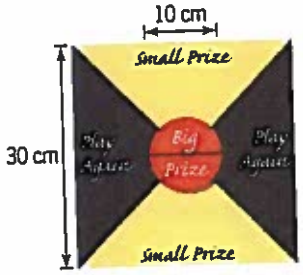
   A The theoretical probability of landing on green is 20% and the experimental probability of landing on green is 20%.
   B The theoretical probability of landing on green is 20% and the experimental probability of landing on green is 25%.
   C The theoretical probability of landing on green is 25% and the experimental probability of landing on green is 20%.
   D The theoretical probability of landing on green is 25% and the experimental probability of landing on green is 25%.

Short Answer

4. A fair coin is flipped four times. What is the probability that it will land heads exactly once?

5. Marlis feels 80% confident that she will pass her driver's exam.
   a) What type of probability is Marlis using? Explain your choice.
   b) What are the odds in favour of Marlis passing her driver's exam, based on her probability estimate? Justify your reasoning.

6. Tenzin is playing a carnival game in which he throws a dart at the target shown below. Assuming that he is equally likely to hit any point on the target, what is the probability Tenzin wins the following on a given throw?



   a) a big prize
   b) a small prize

7. In a game involving two standard dice, you win if you roll a sum of 7 or 11, or if you roll doubles (both dice showing the same number).
   a) What are the odds against you winning this game?
   b) Explain how you solved this problem.

8. Mr. Dobson's tie rack is shown below.

What is the probability that Mr. Dobson randomly selects

a) a solid blue tie or a polka dot tie?

b) a striped tie or a solid coloured tie?

c) a solid black tie or a striped tie?

d) a solid coloured tie or a solid blue tie?

9. Bao has two pencils, a blue pen, and a red pen in his pencil case. Suppose he randomly withdraws one writing tool, followed by another, without replacing the first one. What is the probability that Bao will randomly draw

a) a red pen followed by a blue pen?

b) a pen followed by a pencil?

10. Abia is one of three servers who work at a restaurant that is open from Tuesday to Sunday. Every week the servers randomly draw slips of paper from a hat to decide which two days they will not have to work, in addition to Monday.

One week Abia gets to draw her two days first.

a) What is the probability that Abia will draw a weekend day (Saturday or Sunday) on her first draw?

b) What is the conditional probability that Abia will draw a second weekend day, given that her first draw was a weekend day?

c) What is the probability that Abia will get to enjoy a three-day weekend (Saturday to Monday)?

Chapter Problem

Game Analysis

At the beginning of this chapter you were asked to pick two or three games to analyse and report on the following questions:

1. What elements of the game involve strategy?
2. What elements of the game involve chance or probability?
3. What is the relative balance of strategy versus chance in this game?

Select at least three outcomes that are unique to the game, such as landing on a specific square, or rolling doubles twice in succession. Calculate the probability of each of these events occurring.

Present all of your findings for this project in one of the following formats:

- Written report
- Electronic slideshow
- Podcast
- Poster
- Other