

# Learn About

## Determining Probability and Averages: Probability

**Probability** is the chance that a certain event will occur. The probability of an event occurring is found by dividing the number of favourable outcomes by the number of possible outcomes. Probability can be represented as a fraction or as a per cent.

A bag contains several cards. Each card is the same size and shape. The number of cards of each colour is shown in the chart.

To find the probability of picking a blue card or an orange card, first find the total number of cards. Then divide the number of cards that are blue or orange by the total number of cards. You can write the probability as a fraction or as a per cent.

**Fraction:**

Number of cards: 56

Total number of cards that are blue or orange: 14

Probability:  $\frac{14}{56} = \frac{1}{4}$

**Cards**

Colour	Number
Red	10
Green	15
Blue	8
Black	10
Yellow	7
Orange	6

**Per cent:**

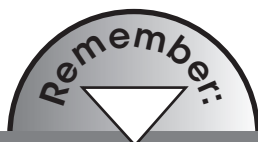
$$\frac{1}{4} = 1 \div 4 = 0.25$$

$$0.25 \times 100 = 25\%$$

Renée's PE teacher is selecting team captains for the volleyball teams. The teacher writes each student's name on a slip of paper and places the papers in a box. She then selects names from the box. The person whose name is selected first will be the captain of team A. There are 15 girls and 13 boys in Renée's class. What is the probability that a girl will be selected as the captain of team A?

There are 28 students in all and there are 15 girls.

The probability that a girl will be selected to be team A's captain is  $\frac{15}{28}$ .



**Probability** is the chance that a certain event will occur. The probability of an event occurring is found by dividing the number of favourable outcomes by the number of possible outcomes.

*Look at the answer choices for each question.  
Read why each answer choice is correct or  
not correct.*

**1. What is the mean number of kilometres travelled each hour, rounded to the nearest whole number?**

**Ⓐ 60 kilometres**

This is not correct. The mean is the total number of kilometres travelled divided by the number of hours.

$(60 + 63 + 65 + 55 + 60) \div 5 \approx 61$ ,  
not 60.

**● 61 kilometres**

This is correct. The mean is the total number of kilometres travelled divided by the number of hours.

$(60 + 63 + 65 + 55 + 60) \div 5 \approx 61$ .

**Ⓒ 62 kilometres**

This is not correct. The mean is the total number of kilometres travelled divided by the number of hours.

$(60 + 63 + 65 + 55 + 60) \div 5 \approx 61$ ,  
not 62.

**Ⓓ 63 kilometres**

This is not correct. The mean is the total number of kilometres travelled divided by the number of hours.

$(60 + 63 + 65 + 55 + 60) \div 5 \approx 61$ ,  
not 63.

**2. What is the mode number of kilometres in Hayley's data?**

**Ⓐ 65 kilometres**

This is not correct. The mode is the number in the data set that appears most often.  
The mode is 60, not 65.

**Ⓑ 63 kilometres**

This is not correct. The mode is the number in the data set that appears most often.  
The mode is 60, not 63.

**● 60 kilometres**

This is correct. The mode is the number in the data set that appears most often. The number 60 appears twice, and all the other numbers appear only once. The mode is 60.

**Ⓓ 55 kilometres**

This is not correct. The mode is the number in the data set that appears most often.  
The mode is 60, not 55.

# Lesson

# 2

Read the passage.  
Then do Numbers 1–5.

## Favourite Books

The year eight class at Lalor Secondary School is having a reading competition this month. The student who reads the most books will win a gift certificate from the local bookshop. Anastasia is confident that she will win the competition because she has always enjoyed reading. When Anastasia went to the library, many of the books that she wanted to read were already out on loan. Anastasia began to wonder what types of books were favourites among her classmates, so she surveyed 75 year eight students. The table shows the results of Anastasia's survey.



Literature Survey

Genre	Number of Students
Fantasy	18
Drama	16
Science Fiction	12
History	14
Mystery	15

1. Based on the results of Anastasia's survey, what is the probability that the next year eight student chosen at random will choose a science fiction book?

- (A)  $\frac{4}{25}$
- (B)  $\frac{14}{75}$
- (C)  $\frac{6}{25}$
- (D)  $\frac{12}{25}$

2. Based on the results of Anastasia's survey, what is the probability that the next year eight student chosen at random will *not* choose a fantasy book?

- (A)  $\frac{18}{50}$
- (B)  $\frac{19}{25}$
- (C)  $\frac{6}{25}$
- (D)  $\frac{9}{50}$

# Lesson 10

Read the passage.  
Then do Numbers 1–5.

## Day at the Snow

Yesterday was a day at the snow for Kinsleton High School. Mr Castillo watched his students to find out how they spent their day. He learned that everyone participated in one of four activities. The results of his survey are shown in the table.



**Snow Day Survey**

Activity	Number of Students
Skiing	7
Tobogganing	8
Ice Skating	5
Snow Sculpture	4

1. One student was unable to go to the snow. Based on the results of how the rest of the class spent the day, what is the probability that the student would have gone tobogganing?

- (A)  $\frac{1}{3}$
- (B)  $\frac{1}{4}$
- (C)  $\frac{2}{3}$
- (D)  $\frac{8}{25}$

2. Based on the information in the chart, what is the probability that a student chosen at random did something other than ski?

- (A)  $\frac{1}{3}$
- (B)  $\frac{1}{5}$
- (C)  $\frac{17}{24}$
- (D)  $\frac{7}{24}$

# Self-Assessment 2

Lessons 6–10

*Answer these questions after you have completed Lessons 6–10. Before you begin, re-read what you wrote in Self-Assessment 1.*

## **FOCUS on Determining Probability and Averages, Book H**

Name \_\_\_\_\_ Date \_\_\_\_\_

1. Rate your work in Lessons 6–10. Circle your answer.

successful

somewhat successful

needs improvement

2. Did any of the questions give you trouble? \_\_\_\_\_

If so, what kind of trouble did you have?

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Is this the same kind of trouble you had in Lessons 1–5? \_\_\_\_\_

3. Did you find the questions easier or more difficult than those in Lessons 1–5?

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Why do you think this is so?

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4. Did you meet the goal you set for yourself for Lessons 6–10? \_\_\_\_\_

Why or why not?

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5. What is your goal for Lessons 11–15?

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Cut along the dotted line.