


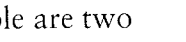


# 5

## Chapter Review

For #1 to #3, copy the statement and fill in the blanks. Use some of these words.

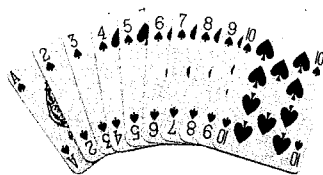
experimental    favourable    independent  
possible        random        sample space  
theoretical    tree diagram

- Probability is the number of  outcomes divided by the number of  outcomes.
- The probability of an event occurring based on experimental results is called  probability.
- A  and a table are two ways of organizing outcomes.
- Rearrange the circled letters in #1 to #3 to find one of the remaining key words. Define this word.

### 5.1 Probability, pages 168–174

- A tool box contains three screwdrivers and two wrenches. An electrician's helper chooses a tool at random. What is the probability she has grabbed a wrench? Write your answer as a fraction, a ratio, and as a percent.

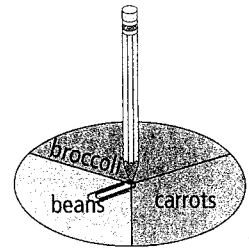
- Melée chooses a card at random from the following set. Write each probability as a fraction, a ratio, and a percent.




- What is  $P(\text{red})$ ?
- What is  $P(3 \text{ or } 4)$ ?
- What is the probability of choosing a number that is a multiple of 3?
- What is  $P(\text{less than } 7)$ ?

### 5.2 Organize Outcomes, pages 175–180

- A chef tapes the word *salad* to one side of a coin and *cooked* to the other side. He makes a spinner with regions for broccoli, carrots, and beans. He flips the coin once and spins the spinner once to choose the vegetable for the night's special at Café Chef. List the sample space for this experiment.



- At a restaurant, Carrie decides to close her eyes and randomly point to one dinner and one dessert on the menu.

<u>Dinner</u>	
Chicken Quiche	
Grilled Fish Burger	
Hamburger Surprise	
Vegetarian Special	
<u>Dessert</u>	
Ice Cream Sundae	
Apple Pie	

- What is the sample space? Draw a diagram or table that shows all of the possible combinations.
- How many dinner and dessert combinations are possible?

### 5.3 Probabilities of Simple Independent Events, pages 181–186

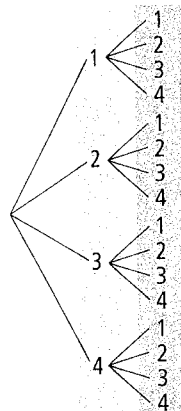
- A coin is flipped twice.
  - What is the sample space? Draw a tree diagram to show the possible outcomes.
  - What is the probability of flipping two tails?

10. A tool box contains a hammer, a screwdriver, a pair of pliers, and a tape measure. A pail contains 1 nail, 4 screws, and 2 hooks. You randomly choose one item from the tool box and one item from the pail.

- Create a table to organize the possible outcomes.
- What is the probability of getting a hammer from the tool box and a nail from the pail?
- What is  $P(\text{tape measure, screwdriver})$ ?

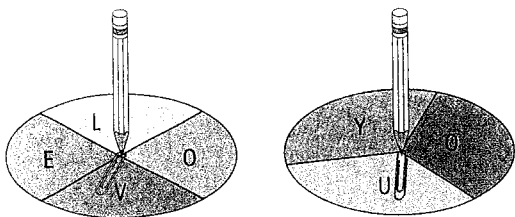
#### 5.4 Applications of Independent Events, pages 187–192

11. a) Describe or draw two possible independent events that could be represented by this tree diagram.



- What is the probability that both numbers are the same?
- What is the probability that the sum of the numbers is 5?
- What is the probability that the number for the first event is smaller than the number for the second event?

12. Each spinner is spun once.



- Draw a tree diagram to organize the sample space.
- What is the probability of getting two letter Os?
- What is the probability that the letter will *not* be the same on both spinners?

#### 5.5 Conduct Probability Experiments, pages 193–199

13. A spinner with 4 equal regions labelled A, B, C, D is spun 20 times. The following tally chart shows the experimental outcomes. Write any probabilities in fraction form.

A	B	C	D

- From the tally chart, what is the experimental probability of spinning C?
- What is the theoretical probability of spinning C?
- Explain why the answers for a) and b) are *not* the same.

14. Anya is tossing a red and white algebra tile. She wants to determine the probability of getting two different colours on two tile flips. She uses a random number generator to get results for 20 pairs of flips.

2 tile flips		A	B	C	D
		First Flip	Second Flip		
1	red, 1, white, 0				
2	First 2 flips	0			
3	Second 2 flips		1	0	
4	Third 2 flips	0		0	
5	Fourth 2 flips	1		1	
6	Fifth 2 flips	1		1	
7	Sixth 2 flips	1		1	
8	Seventh 2 flips	1		1	
9	Eighth 2 flips	1		1	
10	Ninth 2 flips	0		0	
11	Tenth 2 flips	1		1	
12	Eleventh 2 flips	1		1	
13	Twelfth 2 flips	0		1	
14	Thirteenth 2 flips	1		1	
15	Fourteenth 2 flips	1		0	
16	Fifteenth 2 flips	1		0	
17	Sixteenth 2 flips	1		0	
18	Seventeenth 2 flips	1		0	
19	Eighteenth 2 flips	1		0	
20	Nineteenth 2 flips	1		1	
21	Twentieth 2 flips	0		0	
22					

- What is the experimental probability of getting a red and a white, in any order?
- What is the theoretical probability of getting a red and a white, in any order?
- Compare the experimental probability with the theoretical probability.

7. a)  $\frac{12}{20}$  or 60% b)  $\frac{1}{2}$  or 50% c) Answers will vary. The experimental probability is greater than the theoretical probability.

8. a), b) and d) Answers will vary. c)  $\frac{1}{2}$  or 50%

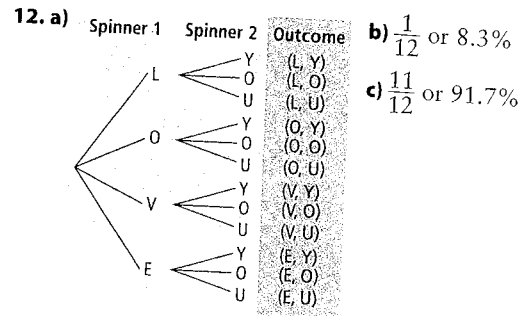
9. a) 7 b)  $\frac{7}{50}$  or 14% c)  $\frac{1}{10}$  or 10% d) Answers may vary.

		Right Button	
		1	2
Left Button	S	S, 1	S, 2
	N	N, 1	N, 2
	A	A, 1	A, 2
	C	C, 1	C, 2
	K	K, 1	K, 2

10. Answers will vary.

11. a)  $\frac{125}{530}$  or 23.6% b)  $\frac{1}{4}$  or 25% c)  $\frac{130}{530}$  or 24.5%

12. Answers will vary. 13. Answers will vary.



13. a)  $\frac{7}{20}$  b)  $\frac{1}{4}$  c) Answers may vary. The probability in a) is based on the results of an experiment.

14. a)  $\frac{8}{20}$  or 40% b)  $\frac{1}{2}$  or 50% c) The theoretical probability is greater than the experimental probability.

### Chapter 5 Review, pages 200–201

- favourable, possible 2. experimental
- tree diagram
- random; an event where every outcome has an equal chance of occurring
- $\frac{2}{5}$  or 2:5 or 40%
- a)  $\frac{0}{10}$  or 0:10 or 0% b)  $\frac{2}{10}$  or 2:10 or 20%
- $\frac{3}{10}$  or 3:10 or 30% d)  $\frac{6}{10}$  or 6:10 or 60%

7.

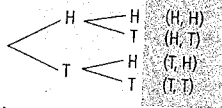
		Spinner		
		Broccoli	Beans	Carrots
Coin	Salad (S)	S, broccoli	S, beans	S, carrots
	Cooked (C)	C, broccoli	C, beans	C, carrots

8. a)

		Dessert	
		Sundae (S)	Pie (P)
Dinner	Quiche	quiche, S	quiche, P
	Burger	burger, S	burger, P
	Surprise	surprise, S	surprise, P
	Special	special, S	special, P

b) 8

9. a) Flip 1 Flip 2 Outcome b)  $\frac{1}{4}$  or 25%



10. a)

		Pail							
		Nail (n)	Screw (s)	Screw (s)	Screw (s)	Screw (s)	Hook (h)	Hook (h)	
Tool Box	Hammer (H)	H, n	H, s	H, s	H, s	H, s	H, h	H, h	
	Screwdriver (S)	S, n	S, s	S, s	S, s	S, s	S, h	S, h	
	Pliers (P)	P, n	P, s	P, s	P, s	P, s	P, h	P, h	
	Tape Measure (T)	T, n	T, s	T, s	T, s	T, s	T, h	T, h	

b)  $\frac{1}{28}$  or 3.6% c) 0

11. a) Answers may vary. Roll a 4-sided die and then spin a 4-section spinner. b)  $\frac{4}{16}$  or 25% c)  $\frac{4}{16}$  or 25%

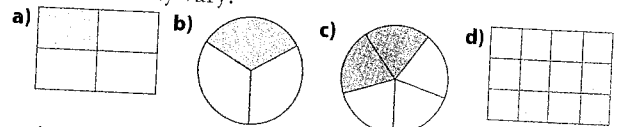
d)  $\frac{6}{16}$  or 37.5%

### Chapter 6

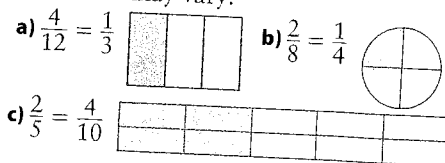
#### Get Ready, pages 208–209

- a) 1, 2, 3, 6 b) 1, 2, 5, 10 c) 1, 2, 3, 4, 6, 8, 12, 24
- Answers may vary. 9, 12, 15, 18, 24
- 100, 456, 294. Answers may vary. They are even numbers.
- a)  $\frac{3}{4}$  b)  $\frac{5}{6}$  c)  $\frac{1}{2}$

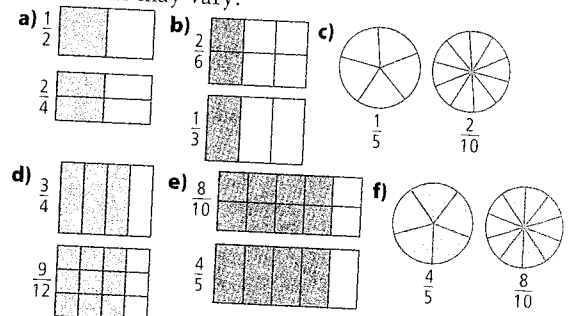
5. Answers may vary.



6. Answers may vary.



7. Answers may vary.



8. a)  $\frac{1}{2}$  b) 0 c) 1 d)  $\frac{1}{2}$

9. Answers may vary. a) No.  $\frac{5}{8}$  is closer to  $\frac{1}{2}$  b) Yes.  $\frac{3}{6} = \frac{1}{2}$  c) Yes. Another possible estimate is  $\frac{1}{2}$  because  $\frac{1}{4}$  is halfway between 0 and  $\frac{1}{2}$ .