

5.3

Probabilities of Simple Independent Events

MathLinks 7, pages 171-176

(Neatly Show your work)

Key Ideas Review

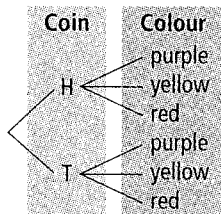
Choose from the following terms to complete #1 and #2.

divide event favourable organizer outcomes table tree diagram

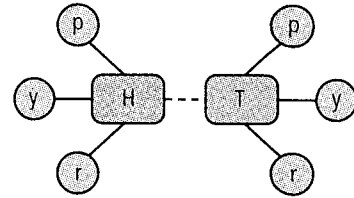
1. Complete the statement.

To find the probability, count the favourable outcomes and divide by the number of possible outcomes

2. Label each kind of diagram.



	Purple	Yellow	Red
Heads	(H, purple)	(H, yellow)	(H, red)
Tails	(T, purple)	(T, yellow)	(T, red)



tree diagram

organizer

Practise and Apply

3. On Wednesdays, students can order a slice of pizza, a chicken quesadilla, or a garden salad, with a juice box or chocolate milk, for \$4 at the cafeteria.

a) Draw a tree diagram to show the sample space.

4. a) How would you describe two events that might result in the ten outcomes in the table?

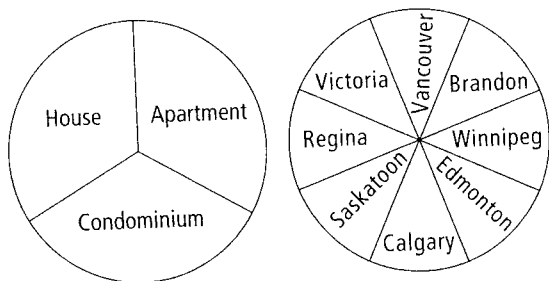
AA	AB	AC	AD	AE
ZA	ZB	ZC	ZD	ZE

OMIT

b) Create one question about the events you chose. Then, answer the question.

b) What is the probability of a student ordering a chicken quesadilla and chocolate milk?

5. Blaine and Stacey create spinners about places to live. They spin each spinner once.



- a) Create a table to show the sample space.
- b) How many possible outcomes are there?
- c) What is $P(\text{apartment, Victoria})$?
- d) What is $P(\text{house or condo, Alberta})$?

6. The grade 7 students are creating designs using paper folding. They can use only two colours: one base colour and one accent colour. There are four colours to choose from: blue, green, yellow, and red.

- a) Draw a tree diagram to show all the possible outcomes for the two colours.

- b) What is $P(\text{red or blue, red or blue})$?

- c) If the students are *not* allowed to use the same colours for the base and accent, how many outcomes do they have to choose from?

7. Haley bought a new board game that has a multi-coloured die (blue, green, yellow, red, white, and pink) and a numbered spinner (1, 2, 3, and 4). To move ahead in the game, she must roll the die and spin the spinner.

- a) Create a table to show all possible outcomes.

- b) What is $P(\text{blue, 3})$?

- c) What is $P(\text{green or white and even number})$?

5.4

Applications of Independent Events*MathLinks 7, pages. 177–182***Key Ideas Review**

1. Find the words in the word search.

EVENTS

OUTCOMES

INDEPENDENT

TABLE

ORGANIZE

TREE DIAGRAM

A	H	V	N	G	W	B	F	O	E	C	O
I	E	J	X	C	K	Y	B	L	M	P	U
M	V	T	A	B	L	E	K	Q	Z	N	T
D	E	G	I	R	T	H	U	O	A	D	C
U	N	S	B	W	A	T	Z	R	U	O	O
L	T	R	E	E	D	I	A	G	R	A	M
E	S	F	Y	C	G	S	V	A	J	P	E
D	O	Z	N	X	M	E	L	N	V	E	S
T	K	Y	S	J	F	I	R	I	Q	I	H
A	P	H	B	Q	X	R	C	Z	W	F	G
I	N	D	E	P	E	N	D	E	N	T	D

Practise and Apply

2. Kellie chooses two items of healthy food for her lunch every day. She chooses one drink (juice, water, or milk) and one snack (apple, orange, carrots, or banana).

a) Use a table to organize the outcomes.

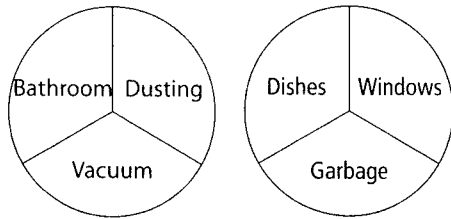
b) What is the probability that Kellie's choice will include milk?

c) What is the probability that Kellie's choice will include juice and an orange?

Name: _____

Date: _____

3. The Huk family spins two spinners to decide which chores each family member will do for the week.

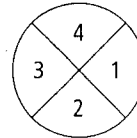


- a) Create a tree diagram to organize the sample space.

- b) What is the probability that a family member will have to dust and do dishes?

- c) Which combination of chores would you not want to do? What is the probability of spinning that combination?

4. Rob, Anou, and Jessie use a spinner to help them choose whether to watch a movie, play a video game, or go swimming. They spin the spinner twice and add the two numbers. If the result is an even sum, they will watch a movie. If the result is an odd sum, they will play a video game. If the result is a sum of 5 or greater, they will go swimming.



- a) Draw a tree diagram showing all the possible outcomes, including the sum of the two numbers spun.

- b) What is the probability of spinning a sum that is an odd number?

- c) What result has a greater probability than your answer in b)?

5.5

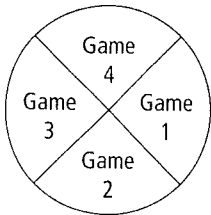
Conduct Probability Experiments*MathLinks 7, pages 183–189***Key Ideas Review**

Determine the column in which each statement belongs. Place an X beside each statement under the correct column.

	Experimental Probability	Theoretical Probability
1. Outcomes that are usually collected in a tally chart and counted at the end of an experiment.		
2. The probability of an event determined from a list of all possible outcomes.		
3. The probability of an event determined from experimental outcomes.		

Practise and Apply

4. A cereal box contains one of four computer games. Kyra uses a spinner to check the experimental probability of finding game 1, game 2, game 3, or game 4 in the box.



She spins the spinner 100 times. Here are her results.

Spinner Outcome	Number of Results
Game 1	25
Game 2	22
Game 3	26
Game 4	27

- What is the experimental probability of finding game 2?
- Calculate the theoretical probability of finding game 2.
- Compare the experimental and theoretical probabilities.
- How would your answers to a), b), and c) change if you were using the results for game 1?

Name: _____

Date: _____

5. Maria is packing art materials in boxes. She puts a package of crayons and a package of pencil crayons in one box, and then a package of crayons and a package of pencil crayons in a second box. You get to pick one package from each box. Use the results from the random generator to check the probability of picking two different types of packages.

6. Conduct a probability experiment to determine the probability of getting 2 tails on 2 coin flips. Record your results for 20 pairs of coin flips.



- a) Organize your results in a tally chart.

	A	B	C
1	crayons 1, pencil crayons 0	First Pick	Second Pick
2	First 2 picks	0	1
3	Second 2 picks	1	0
4	Third 2 picks	0	1
5	Fourth 2 picks	0	0
6	Fifth 2 picks	0	1
7	Sixth 2 picks	0	0
8	Seventh 2 picks	1	0
9	Eighth 2 picks	0	0
10	Ninth 2 picks	1	0
11	Tenth 2 picks	0	1
12	Eleventh 2 picks	1	1
13	Twelfth 2 picks	0	1
14	Thirteenth 2 picks	1	1
15	Fourteenth 2 picks	1	1
16	Fifteenth 2 picks	1	1
17	Sixteenth 2 picks	1	0
18	Seventeenth 2 picks	0	0
19	Eighteenth 2 picks	1	0
20	Nineteenth 2 picks	0	0
21	Twentieth 2 picks	0	0
22			
23			

Coin Outcomes	Experimental Results

- b) Write two questions based on your probability experiment. Answer both of your questions.

- a) What is the experimental probability of picking a package of each type?
- b) What is the theoretical probability of picking a package of each type?
- c) Compare the experimental probability with the theoretical probability.

Vocabulary Link

Match the descriptions in Column A with the terms in Column B by connecting them with a line. Then, write the term on the blank lines.

A	B																	
1. all possible outcomes of a probability experiment	a) equally likely																	
2. one possible result of a probability experiment	b) experimental																	
3. the likelihood or chance of an event occurring	c) favourable outcome																	
4. 50:50 chance	d) independent																	
5. a successful result in a probability experiment	e) outcome																	
6. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th style="text-align: center;">Type of Duck</th> <th style="text-align: center;">Tally</th> </tr> </thead> <tbody> <tr> <td>Canvasback</td> <td> </td> </tr> <tr> <td>Redhead</td> <td> </td> </tr> <tr> <td>Mallard</td> <td> </td> </tr> <tr> <td>Pintail</td> <td> </td> </tr> </tbody> </table>	Type of Duck	Tally	Canvasback		Redhead		Mallard		Pintail		f) probability							
Type of Duck	Tally																	
Canvasback																		
Redhead																		
Mallard																		
Pintail																		
7. type of event in which the outcome of one event has no effect on the outcome of another event	g) random																	
8. <table style="margin: 10px auto;"> <thead> <tr> <th style="text-align: center;">Coin Flip</th> <th style="text-align: center;">Spinner</th> <th style="text-align: center;">Outcome</th> </tr> </thead> <tbody> <tr> <td rowspan="3" style="text-align: center;">H</td> <td>bear</td> <td>H, bear</td> </tr> <tr> <td>elk</td> <td>H, elk</td> </tr> <tr> <td>salmon</td> <td>H, salmon</td> </tr> <tr> <td rowspan="3" style="text-align: center;">T</td> <td>bear</td> <td>T, bear</td> </tr> <tr> <td>elk</td> <td>T, elk</td> </tr> <tr> <td>salmon</td> <td>T, salmon</td> </tr> </tbody> </table>	Coin Flip	Spinner	Outcome	H	bear	H, bear	elk	H, elk	salmon	H, salmon	T	bear	T, bear	elk	T, elk	salmon	T, salmon	h) sample space
Coin Flip	Spinner	Outcome																
H	bear	H, bear																
	elk	H, elk																
	salmon	H, salmon																
T	bear	T, bear																
	elk	T, elk																
	salmon	T, salmon																
9. expected probability of an event occurring	i) tally chart																	
10. an event in which every outcome has an equal chance of occurring	j) theoretical																	
11. probability of an event occurring based on experimental results	k) tree diagram																	