Name: _____   Date: _____

Communicate the Ideas

1. A bag holds 1 black, 1 white, and 1 grey marble.
   Another bag holds 1 penny and 1 dime.
   Explain how to use multiplication to find the probability of
   choosing 1 grey marble and 1 penny [P(grey and penny)].

   _____

   _____
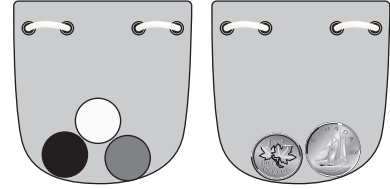
2. Describe what a simulation is. Give an example of when you could use a simulation.
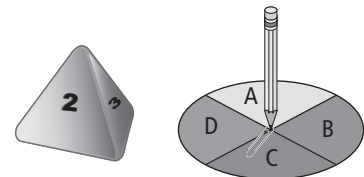
   _____

   _____

Check Your Understanding

Practise

3. Brittany spins the spinner and rolls a 4-sided die.

   a) Complete the table to show the sample space.

Die	Spinner			
	A	B	C	D
1				
2				
3				
4				

   b) What is $P(2, A)$?

   $P(2, A) = \dfrac{\text{favourable outcomes}}{\text{possible outcomes}}$

   $= \dfrac{\boxed{}}{\boxed{}}$
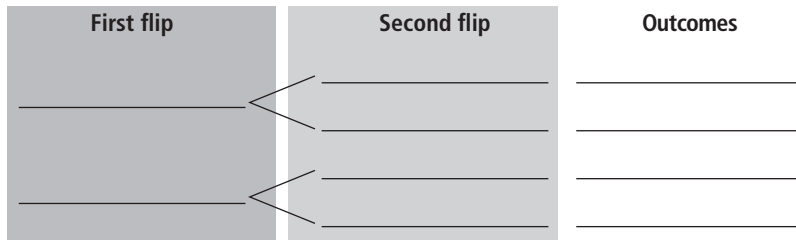
   c) Use multiplication to find $P(2, A)$.

   $P(2, A) = P(2) \times P(\underline{\hspace{2cm}})$

   $= \dfrac{1}{4} \times \dfrac{\boxed{}}{\boxed{}}$

   $= \dfrac{\boxed{}}{\boxed{}}$

Name: _____   Date: _____

4.   You flip a coin twice.

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

First flip	Second flip	Outcomes
_____	_____	_____
	_____	_____
_____	_____	_____
	_____	_____

b) What is $P(H, H)$?

c) Check your answer using multiplication.

$P(\underline{\hspace{2cm}}, \underline{\hspace{2cm}})$

$= \dfrac{\Box}{\Box}$

$P(H, H) = P(\underline{\hspace{1.5cm}}) \times P(\underline{\hspace{1.5cm}})$

5.   Grade 8 students are planting 4 types of flowers: daisy (D), marigold (M), rose (R), and tulip (T).
The students can plant them in 4 places: school (S), flowerpot (F), park (P), and hospital (H).
Tamira does an experiment to see where the different flowers will be planted.
The sample space is (M, F), (R, H), (D, S), (M, F), (T, H), (T, P), (D, H), (R, P), (M, P), (R, F).

a) What is the experimental probability of getting $P(\text{marigold, flowerpot})$?

$P(M, F) = \dfrac{\boxed{}}{10} \quad \begin{matrix} \leftarrow \text{number of favourable outcomes} \\ \leftarrow \quad\quad \text{number of trials} \end{matrix}$

b) Use multiplication to find the theoretical probability of $P(\text{marigold, flowerpot})$.

$P(\text{marigold}) = \dfrac{\Box}{\Box} \qquad\qquad P(\text{flowerpot}) = \dfrac{\Box}{\Box}$

$P(\text{marigold, flowerpot}) = P(\text{marigold}) \times P(\text{flowerpot})$

Name: _____ Date: _____

Apply

6. Josh is ordering pizza for his soccer team.
There are 3 specials: Peppy Pepperoni, Happy Hawaiian, and Cheery Cheese.
He can choose from 2 types of crust: regular or thin.

a) How many different combinations of pizza are there? Show your thinking.
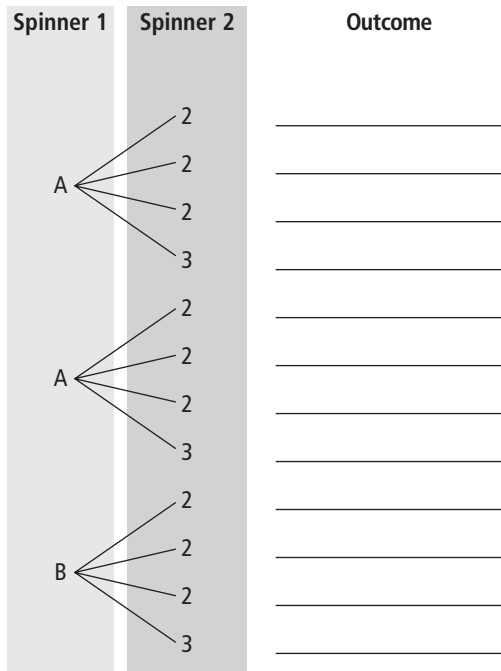
Sentence: _____

b) What is the probability he will choose Happy Hawaiian with thin crust?
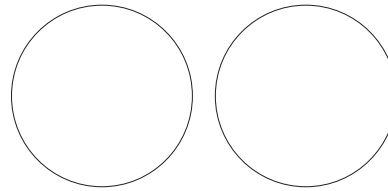Use 2 different ways to show your answer.

c) Josh finds out 1 of the players is allergic to pepperoni.
How many combinations of pizza are there without pepperoni?

Sentence: _____

Name: _____ Date: _____

7. a) Complete the tree diagram to find the outcomes for 2 spinners.

Spinner 1	Spinner 2	Outcome

A
- 2 _____
- 2 _____
- 2 _____
- 3 _____

A
- 2 _____
- 2 _____
- 2 _____
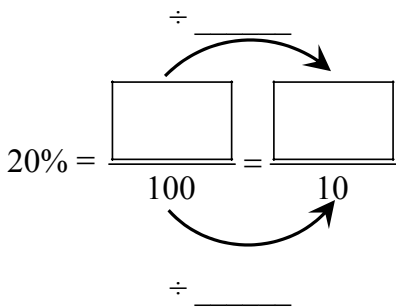- 3 _____

B
- 2 _____
- 2 _____
- 2 _____
- 3 _____

b) Draw a picture of each spinner.

c) What is $P(A, 3)$?

Sentence: _____

_____

8. The weather forecaster predicts that there is a 70% chance of rain in Victoria and a 20% chance of rain in Calgary. What is the probability that it will rain in both cities?

÷ _____

$20\% = \dfrac{\boxed{}}{100} = \dfrac{\boxed{}}{10}$

÷ _____

70% is the same as 0.70, $\dfrac{70}{100}$, or $\dfrac{7}{10}$.

$P(\text{rain in Victoria, rain in Calgary}) = P(\text{Victoria}) \times P(\text{Calgary})$

$$= \dfrac{\boxed{}}{\boxed{}} \times \dfrac{\boxed{}}{\boxed{}}$$

$$= \dfrac{\boxed{}}{\boxed{}}$$

Sentence: _____