# 11.3 Determining Probabilities Using Fractions

MathLinks 8, pages 426–435

Key Ideas Review

Choose from the terms below to complete #1.

| experimental   multiplying   results   simulation   success   tables   tree diagrams |

1. a) When you are finding probability using two or more independent events,

you can find the probability by _____ the probabilities of

_____ for each single event.

b) There are three ways to find the probability of independent events:

_____, _____, and _____.

c) A _____ is an experiment that can be used to model a real situation.

d) The _____ of a simulation are called _____ results.

Practise and Apply

2. Chad tosses this die and spins the spinner.
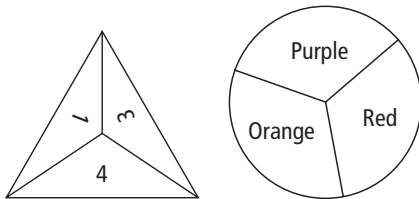
a) Show the sample space.

b) What is the probability of rolling a 4 and spinning purple?

c) Verify your answer by multiplying each successful probability.

3. Jessie and Johan use their pencil cases to predict the probability of drawing the same pencil out of each case.

a) What is the probability of them both choosing a grey pencil from their pencil cases? Use multiplication to find your answer.

b) Verify your answer using a tree diagram.

4. The Grade 8 students have decided to decorate their school. Each class gets a part of the school to decorate. There are four Grade 8 classes: 8A, 8B, 8C, and 8D, and there are six available areas in the school: the foyer, library, hallway, gymnasium, cafeteria, and office. The students roll a six-sided die to determine which area they will decorate.

a) Design and describe a simulation to find the probability that 8C will get the foyer. Perform 20 trials. Record your results. What is the experimental probability of P(8C, foyer)?

5. Greg plays basketball for the school team. His statistics show he has a 60% chance of making his first foul shot and a 25% chance of making his second shot.
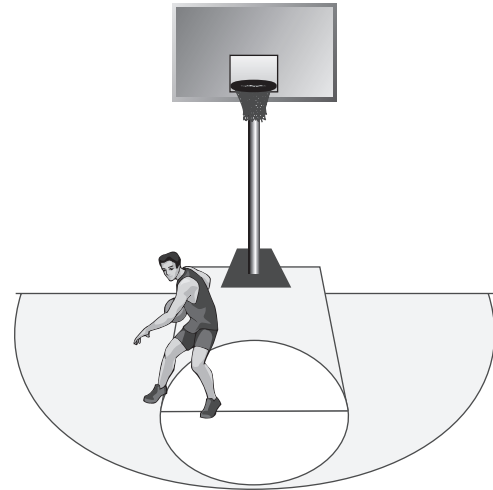
a) What is the probability of making both shots? Show your thinking.

b) Design and describe a simulation to find the experimental probability of him making both shots. Repeat the simulation 25 times. Record your results. What is P(both shots)?

b) Use multiplication to determine the theoretical probability of P(8C, foyer). Show your answer as a fraction and a percent to two decimal places.

c) Compare your experimental and theoretical probability.

c) Compare the experimental probability and theoretical probability.