Step-by-Step 1

Lesson 7.1, Question 7

Use the graph on page 261.

Step 1   Which sports have bars of the same length?

_____

Which sports are equally popular?

_____

Step 2   The mode of a set of data is the number that occurs most often.

Which bars on the graph are the same length?

_____

What does that tell you about these sports?

_____

How could you use the graph to find the mode?

_____

Step 3   Estimate the length of each bar in the graph.

Complete the table below.

Sport	Number of People	Sport	Number of People
Volleyball		Hockey	
Tennis		Golf	
Swimming		Cycling	
Soccer		Basketball	
Skiing		Baseball	
Total		**Total**	

Step 4   The mean is an average for the data. One way to calculate the mean is to find

the total number of people and divide by the number of sports.

What is the total number of people? _____ + _____ = _____

How many sports are there altogether? _____

Calculate the mean: _____ ÷ _____ = _____

Step-by-Step 2

Lesson 7.2, Question 4

Step 1   The mode is 100. Assume 100 appears twice.

Let both the 3rd and 4th numbers be 100.

_____, _____, 100, 100, _____, _____

What is the median? _____

The mean and the median are equal.

What does this tell you about the numbers on each side of the median?

_____

Step 2   Choose a number between 1 and 30: _____

Add this number to the median to get the 5th number: _____

Subtract this number from the median to get the 2nd number: _____

Step 3   Use the number you chose in *Step 2*.

Add this number to the 5th number to get the 6th number: _____

Subtract this number from the 2nd number to get the 1st number: _____

Write your data set: _____, _____, 100, 100, _____, _____

Step 4   Find the mean of your data set to check.

Step 5   Use your data set in *Step 3*.

How does an outlier affect the mean? _____

The mean is to be less than the median.

Should the outlier be significantly less than or greater than the other data values?

_____

Step 6   Replace one of the numbers in your data set with an outlier.

_____, _____, 100, 100, _____, _____

Step 7   The mean should be less than the median.

Find the mean of your data set in *Step 6* to check.

Step-by-Step 3

Lesson 7.3, Question 6

Step 1   **a)** What is the average number of raisins claimed to be in one cup of cereal?
_____

b) How many cups of cereal are in one box? _____

c) Approximately how many raisins should be in one box? _____

Step 2   Calculate the mean, median, and mode numbers of raisins.

Step 3   An outlier is significantly different from the other entries in a set of data.
What are the outliers?

_____

Step 4   Remove the outliers. Calculate the mean, median, and mode without the outliers.

_____

Step 5   Compare the values you found in *Steps 2* and *4*. What do you notice?

_____

_____

Step 6   Compare the results from *Steps 2* and *4* with the average number of raisins per box from *Step 1c*. What do you notice?

_____

Were the outliers recording errors? _____
Should they be used when reporting the average number of raisins? _____
Explain.

_____

Was the advertisement true? _____

Step-by-Step 4

Lesson 7.4, Question 6

Step 1   Which sweater size was the most popular size sold last week? _____

Which average represents this size? _____

Why is this average most useful to the storeowner?

_____

Step 2   Calculate the mean, median, and mode allowance.

Mean: _____; Median: _____; Mode: _____

To convince his parents to increase his allowance, should Robbie use the greatest

or the least average? _____

Which average is most useful to Robbie? _____

Step 3   Think of the definition of *median*.

What is the median of a data set? _____

What do you know if your mark is greater than the median mark?

_____

What do you know if your mark is less than the median mark?

_____

Which average should Tina use if she wants to know if she is in the top half or bottom half of the class? Explain.

_____

Step-by-Step 5

Lesson 7.5, Question 7

You will need a blank spinner (Master 7.10).

Step 1   The probability of landing on red is $\frac{1}{5}$.

Write an equivalent fraction for $\frac{1}{5}$ with denominator 10: _____

Step 2   The probability of landing on yellow is 50%.
Write 50% as a fraction with denominator 100: _____
Find an equivalent fraction for this fraction with denominator 10: _____

Step 3   The probability of landing on blue is 1:10.
Express the ratio 1:10 as a fraction with denominator 10: _____

Step 4   The probability of landing on green is $\frac{2}{10}$.
The fraction $\frac{2}{10}$ already has denominator 10.

Step 5   Each probability is now expressed as a fraction with denominator 10.
How many sectors should the spinner have? _____
Choose the appropriate spinner.

Step 6   Use the numerator of each fraction with denominator 10 in *Steps 1* to *4*.
How many sectors should there be of each colour?

Red: _____ sectors

Yellow: _____ sectors

Blue: _____ sectors

Green: _____ sectors

Step 7   Colour the spinner.
Explain how you constructed your spinner.

_____

_____

Step-by-Step 6

Lesson 7.6, Question 6

Step 1   Draw a tree diagram to represent the possible outcomes of rolling the tetrahedron and then spinning the pointer on a spinner.

   i) State the number of possible outcomes. _____

   ii) State the number of favourable outcomes (yellow/blue or blue/yellow). _____

   iii) Write a fraction to represent the probability of making green when the tetrahedron

   is rolled and the pointer on the spinner is spun. _____

Step 2   Draw a tree diagram to represent the possible outcomes of rolling the tetrahedron twice.

   i) State the number of possible outcomes. _____

   ii) State the number of favourable outcomes (yellow/blue or blue/yellow). _____

   iii) Write a fraction to represent the probability of making green when the tetrahedron

   is rolled twice. _____

Step 3   Draw a tree diagram to represent the possible outcomes of spinning the pointer on the spinner twice.

   i) State the number of possible outcomes. _____

   ii) State the number of favourable outcomes (yellow/blue or blue/yellow). _____

   iii) Write a fraction to represent the probability of making green when the pointer on

   the spinner is spun twice. _____

Step 4   **a)** Write the probabilities you found in part iii of *Steps 1, 2*, and *3*.

   _____, _____, _____

   b) Which of the three probabilities is the greatest? _____

   c) Which strategy should the player choose to have the greatest chance of winning the game?

   _____

   _____