Name _____ Date _____

Master 5.9

Step-by-Step 1

Lesson 5.1, Question 18

You will need a sheet of 1-cm grid paper and coloured pencils.

Step 1 Draw a 6-cm by 8-cm rectangle on grid paper.

Count the squares. What is the area of the rectangle? _____

Step 2 Which percent does the fraction $\frac{1}{3}$ represent? _____

Write $33.\overline{3}\%$ as a fraction. _____

Multiply the number of squares in the rectangle by this fraction. _____

How many squares will you shade red to represent this fraction? _____

Shade the squares.

Step 3 Write 0.25 as a fraction with denominator 100. _____

Simplify the fraction. _____

Multiply the number of squares in the rectangle by this fraction. _____

How many squares will you shade green to represent this fraction? _____

Shade the squares.

Step 4 Multiply the number of squares in the rectangle by $\frac{3}{8}$. _____

How many squares will you shade blue to represent this fraction? _____

Shade the squares.

Step 5 How many squares are not shaded? _____

What fraction of the total number of squares is this? _____

Write the fraction as a decimal, then as a percent.

_____

Step 6 Repeat *Steps 1* to *5* for a 6-cm by 9-cm rectangle, then for a square of side length 7 cm.

Step 7 Which rectangle did you find easier to work with? Explain.

_____

Name _____ Date _____

Name _____ Date _____

Master 5.10

Step-by-Step 2

Lesson 5.2, Question 16

Step 1 Round 0.75% to the nearest percent. _____

Use the rounded percent and the population in 1888.

Estimate the population in 1910.

_____

Step 2 Write 0.75% as a decimal. _____

Calculate 0.75% of 2000. _____

What was the population in 1910? _____

Step 3 What was the population in 1888? _____

What was the population in 1910? _____

Subtract the populations:

What is the decrease in population?

_____

Name _____ Date _____

Master 5.11

Step-by-Step 3

Lesson 5.3, Question 13

Step 1 Write 24% as a decimal. _____

Use the population in 1990.

Calculate 24% of 693 000. _____

What was the increase in population from 1990 to 2000? _____

Add the increase in population to the population in 1990. _____

What was the population in 2000? _____

Step 2 Write 11% as a decimal. _____

Use the population in 2000.

Calculate 11% of the population in 2000. _____

What was the increase in population from 2000 to 2005? _____

Add the increase in population to the population in 2000. _____

What was the population in 2005? _____

Step 3 Subtract the population in 1990 from the population in 2005. _____

What was the increase in population from 1990 to 2005? _____

Step 4 To find the percent increase, write the increase as a fraction of the original population.

_____

Use a calculator. Write this fraction as a percent. _____

Step 5 The increase in population from 1990 to 2000 was about 24%.

The increase in population from 2000 to 2005 was about 11%.

24% + 11% = 35%

Is your answer in *Step 4* 35%? _____

Should the answer be 35%? Explain why or why not.

_____

_____

Name _____ Date _____

Master 5.12

Step-by-Step 4

Lesson 5.4, Question 10

Choice A

Step 1 The regular price of a DVD is $25.00.

There is a 30% discount.

What percent of the regular price do you pay? _____

Find this percent of the regular price.

What is the sale price of a DVD? _____

Choice B

Step 2 A customer can buy two DVDs for $40.00.

What is the price of one DVD? _____

Step 3 Compare your answers in *Steps 1* and *2*.

Which is the better deal for the customer? Explain.

_____

_____

Name _____ Date _____

Master 5.13

Step-by-Step 5

Lesson 5.5, Question 14

Step 1 Write the amount of each ingredient.

Macaroni: _____ cups

Oranges: _____ cups

Apples: _____ cups

Celery: _____ cups

Mayonnaise: _____ cups

Add to find the total amount of ingredients. _____

Step 2 Look at the numbers in *Step 1*.

Write the ratio of oranges to apples: _____ : _____

Write the ratio of mayonnaise to macaroni: _____ : _____

Write the ratio of apples to mayonnaise to celery: _____ : _____ : _____

Step 3 What is the total amount of apples and oranges? _____ cups

Write the ratio of the total amount of apples and oranges to the total amount of ingredients (from *Step 1*). _____ : _____

Write this ratio as a fraction. _____

Write this fraction as a percent. _____

Step 4 Patrick uses only 2 cups of oranges.

What is the new total amount of ingredients? _____

Repeat *Steps 2* and *3* for the new amount of oranges.

Step 5 Write your own ratio problem about this salad.

_____

_____

Solve your problem.

Name _____ Date _____

Master 5.14

Step-by-Step 6

Lesson 5.6, Question 14

Use red, blue, and green counters.

Step 1 The ratio of red to blue counters is 5:6.
Draw a diagram to show this ratio.

Step 2 The ratio of blue to green counters is 3:4.
Draw a diagram to show this ratio.

Step 3 The ratio of red to blue to green counters is 10:12:16.
Draw a diagram to show this ratio.

Step 4 How many more ways can you find numbers of counters with the ratios in *Steps 1*, *2*, and *3*? Explain.

_____

_____

Step 5 There are 5 red and 6 blue counters.
Multiply each number of counters by 2.
How many counters of each colour are there? _____

Step 6 There are 3 blue and 4 green counters.
Multiply each number of counters by 4.
How many counters of each colour are there? _____

Step 7 The ratio of red to blue to green counters is 10:12:16. How does this ratio compare with the number of counters of each colour in *Steps 5* and *6*? _____
Draw a set of counters that satisfies all 3 ratios.

How many different ways can you do this? Explain.

_____

_____

Name _____ Date _____

Master 5.15

Step-by-Step 7

Lesson 5.7, Question 13

Step 1 Write equivalent ratios for 7:5 until the second term is 30.

_____

There are 30 non-fiction books in Ms. Arbuckle's class library.

How many fiction books are there? _____

Step 2 Write equivalent ratios for 4:3 until the second term is 30.

_____

There are 30 non-fiction books in Mr. Albright's class library.

How many fiction books are there? _____

Step 3 Use your answers to *Steps 1* and *2*.

Which room has more fiction books? _____

How many more fiction books does this room have? _____

Step 4 How many books are in Ms. Arbuckle's class?

_____ fiction books + _____ non-fiction books = _____ books

Write the number of non-fiction books as a fraction of the total number of books:

_____

Write this fraction as a percent. _____

What percent of the books in Ms. Arbuckle's class is non-fiction?_____

Step 5 How many books are in Mr. Albright's class?

_____ fiction books + _____ non-fiction books = _____ books

Write the number of non-fiction books as a fraction of the total number of books:

_____

Write this fraction as a percent._____

What percent of the books in Mr. Albright's class is non-fiction?_____

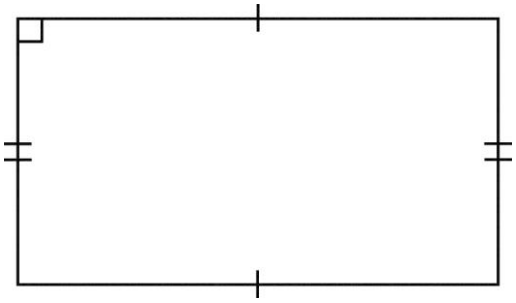
Name _____ Date _____

Master 5.16

Step-by-Step 8

Lesson 5.8, Question 11

Step 1 Label this rectangle MNPQ.
Draw MP.



Step 2 Write this ratio. Length of MN:length of MP

_____

Step 3 Does the ratio in *Step 2* tell you the length of MN? Explain.

_____

Step 4 Use equivalent ratios. Write 3 sets of possible lengths for MN and MP.

MN = _____, MP = _____;

MN = _____, MP = _____;

MN = _____, MP = _____

Step 5 Suppose MN is 12 cm. How long is MP? How do you know?

_____

_____

Name _____ Date _____

Master 5.17

Step-by-Step 9

Lesson 5.9, Question 18

Step 1 Petra paints 225 dolls in 1 h.

How many minutes are in 1 h? _____

How many 15-min intervals are in 1 h? _____

How many dolls can Petra paint in 15 min? _____

Write your answer as a rate. _____

Step 2 Petra paints 225 dolls in 1 h.

How many minutes are in 1 h? _____

How many dolls can Petra paint in 1 min? _____

How many seconds are in 1 min? _____

How many 30-s intervals are in 1 min? _____

How many dolls can Petra paint in 30 s? _____

Write your answer as a rate. _____

Step 3 What assumptions do you make?

_____

_____

Name _____ Date _____

Master 5.18

Step-by-Step 10

Lesson 5.10, Question 14

Brand A costs $12.99 for a 3.6-kg bag.
Brand B costs $39.99 for an 18.1-kg bag.

Step 1 About how many times larger than Brand A is a bag of Brand B?

_____

About how many times greater than Brand A is the cost of Brand B?

_____

Look at your answers.

Which brand do you think is the better buy? _____

Step 2 Use 1 kg as the unit.

Calculate the unit cost for Brand A.

Calculate the unit cost for Brand B.

Step 3 Compare the unit costs in *Step 2*.

Which brand is the better buy? _____

How does this compare with your estimate in *Step 1*? _____

_____

Step 4 Give two reasons why Becky might not purchase the better buy.

_____

_____