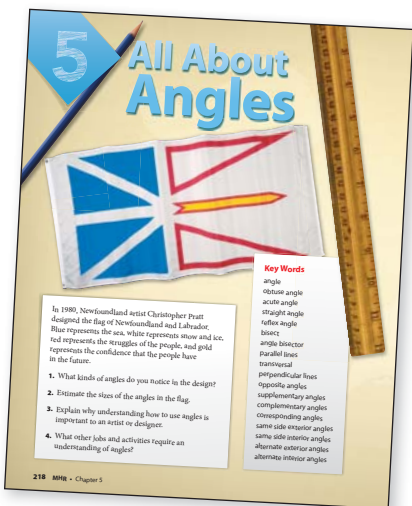


# A Tour of Your Textbook

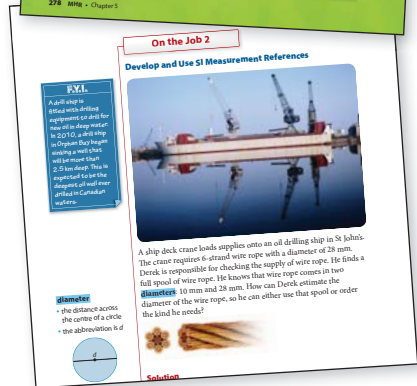
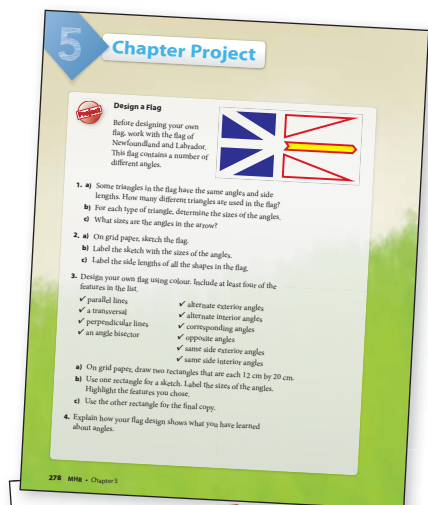
## Chapter Opener

Each chapter begins with a two-page spread which introduces you to what you will learn in the chapter.



The first page includes a visual, a list of **Key Words**, and some questions.

- The visual and questions are related to the **Chapter Project**, which is at the end of the chapter.
- The **Key Words** are used throughout the chapter. The first time each Key Word is used, it is highlighted in **blue**. The word is defined in the margin. Sometimes there is a visual.



### Career Link

Michael is the head server at a fine-dining restaurant. He prepares the schedule for the dining room. He also works with money in many ways, including estimating bills, calculating tips, and giving change.



Getting Paid for Your Work • MHR 171

## Career Link

The second page of each chapter opener has a **Career Link** and a series of visuals.

- Check the Career Link for information about interesting jobs related to the math in the chapter.
- The pictures show people doing various types of work that use the math in the chapter.

## Get Ready

The **Get Ready** is next.

- These pages provide a brief review of skills used in the chapter.
- Some of these skills are from previous grades. Others are from previous chapters.
- You will need these skills to be successful with the chapter.

**1 Get Ready**

**Round**

The names of the place values are shown.

1	2	3	4	5	6	7
Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths

If the value following the place value that you are rounding to is 5 or more, round up. If the value is less than 5, round down.

Let's try it. Round down 1.279 m rounded to the nearest tenth is 1.3 m.

1. Round each decimal number to the place value indicated.

- 12.76 (tenths)
- 384 (hundreds)
- 0.099 (hundredths)
- 8.473 (ones)
- 16 (ones)
- 100.4 (ones)
- 259.015 (hundredths)
- 1.01 (tenths)

2. Round each measurement to the place value indicated.

- 0.084 cm (tenths)
- 1.265 ft (hundredths)
- 41.3 km (tens)
- 89.98 yd (tenths)
- 55.5 in. (ones)
- 10.86 mm (ones)
- 0.101 m (hundredths)
- 1499 ml (thousands)

3. Round each amount of money to the nearest cent.

- \$0.678
- \$35.992
- \$7.004
- \$44.335
- \$1.854
- \$0.109
- \$9.999
- \$0.001

**Compare Numbers**

4. Write each pair of numbers with  $>$ ,  $<$ , or  $=$  between them.

- 0.02, 0.0195
- 0.3, 0.30
- 1.142, 1.15
- 25.80, 25.09
- 0.007, 0.0070
- 6.98, 6.9
- 11.01, 11.10
- 0.25, 0.249

Compare the digits that are in the same place value. Both numbers have a zero in the tenths place, so compare the numbers in the hundredths place value.

**Proportions**

A proportion shows that two fractions are equivalent. For example,  $\frac{3}{4} = \frac{9}{12}$ .

5. Solve for  $x$  in each proportion.

- $\frac{7}{10} = \frac{x}{100}$
- $\frac{3}{8} = \frac{27}{x}$
- $\frac{x}{25} = \frac{4}{100}$
- $\frac{18}{x} = \frac{36}{40}$
- $\frac{4}{x} = \frac{40}{5}$
- $\frac{x}{6} = \frac{0.2}{12}$
- $\frac{0.9}{1.5} = \frac{x}{15}$
- $\frac{1.7}{25.0} = \frac{5.8}{x}$

**Convert SI Units**

6. Convert each amount to the SI unit indicated.

- 1000 mL (litres)
- 1 kg (grams)
- 2.6 L (millilitres)
- 5890 g (kilograms)
- 765 mL (litres)
- 0.7437 kg (grams)
- 0.002 L (millilitres)
- 38 g (kilograms)

**Percent**

A proportion shows that two fractions are equivalent. For example,  $\frac{3}{4} = \frac{9}{12}$ .

7. Estimate and calculate the following percents.

- 90% of 209
- 20% of 835
- 3% of 38
- 42% of 9000
- 12.5% of 399
- 151% of 22

**Tech Link**

Follow the steps to calculate 90% of 209. Press  $\boxed{90} \boxed{\div} \boxed{90} \boxed{\times} \boxed{209} \boxed{=}$ .

You may need to use different keystrokes on your calculator. Experiment or check with a classmate.

**Tech Link**

Follow these steps to calculate 28 out of 200 as a percent. Press  $\boxed{28} \boxed{\div} \boxed{200} \boxed{\times} \boxed{100} \boxed{=}$ .

8. Calculate each value as a percent. Where necessary, round to the nearest percent.

- 28 out of 200
- 31 out of 50
- 25 out of 26
- 327 out of 1569
- 24.5 out of 65
- 4.4 out of 192.6

## Sections

Each chapter is divided into sections. Each section starts with an **Explore**.

## Explore

This activity is designed to help you build an understanding of the new concept. The activity is often related to the opening visual and introductory text in the section.

The **Reflect** question at the end of each Explore helps you explain what you learned from the activity.

There may be one or more **Extend Your Understanding** questions. These often connect the math skill to a way that people use it in their job or in their lives.

## On the Job

One or more **On the Jobs** follow the Explore. These demonstrate how to use the concept from the Explore.


- Each **On the Job** starts with a problem. These problems come from everyday life or work experiences.
- The **Solution** may show one or more ways to solve the problem. One method may make more sense to you than another. Or, you can develop your own method.
- Notes in a speech bubble provide tips for solving the problem.
- Calculator key sequences are shown in gray. You may need to check that your calculator uses the same sequence.

The **On the Job** ends with a **Your Turn**. This gives you an opportunity to show that you understand what you have learned.

### 1.2 Currency Exchange

**Focus On**

- Converting between Canadian money and foreign currencies
- Estimating the cost of items from another country in Canadian currency



**Exchange rate**  
A rate that specifies how much one currency is worth in terms of the other.

**Materials**  
• Internet access or newspapers with foreign exchange rates  
• Calculator

**Preparation**  
• An equation that says two rates or ratios are equal.  
• An example is  $\frac{1}{2} = \frac{4}{8}$ .

**Explore Exchange Rates**

Exchange rates change every day. Before exchanging money, many people research the current exchange rates.

1. Andrea's family is travelling to Ellerslieville, New York, for a day trip. The day they exchange their money, C\$1 = US\$0.921434. This means that 1 Canadian dollar equals 0.921434 U.S. dollars. Write each conversion as a **proportion**. Then, solve.

a) Andrea's sister has C\$100 to spend. How much will she get in American currency?

b) Andrea has C\$250 to spend. How much is this in American currency?

c) Andrea's parents exchange C\$1200. How much do they get in American currency?

**Web Link**  
To find current exchange rates, go to [www.bankofcanada.ca](http://www.bankofcanada.ca) and follow the link to get an online currency converter, go to [www.bankofcanada.ca](http://www.bankofcanada.ca) and follow the links.

**Today's Exchange Rates**

CANADIAN \$		USD	
1	0.921434	1	1.086

3. **Reflect**

a) What strategy would you use to convert from one currency to another currency? Explain how it works.

b) Compare your strategy with that of a partner.

4. **Extend Your Understanding** Exchange rates change regularly. When Andrea went online, she saw the exchange rates below.

a) What was C\$1 worth in American dollars that day?

b) What was US\$1 worth in Canadian dollars that day?

5. a) Go online to get today's exchange rates.  
b) Calculate the value of C\$500 in U.S. currency.  
c) Use an online converter to check your answer.

### On the Job 2

**Convert Pounds and Kilograms**

Tina's uncle caught a 7.7-kg Atlantic salmon one day while on holiday in Shovel Harbour.

a) He wants bragging rights back in Maine. How many pounds is the fish? Show your answer to the nearest pound.

b) The biggest Atlantic salmon he caught in Maine was a 15-lb fish. What was its mass in kilograms? Show your answer to the nearest tenth of a kilogram.

c) Which fish has a greater mass? By how many pounds? By how many kilograms?


**Solution**

a)  $1 \text{ kg} \approx 2.2 \text{ lb}$   
**Method 1: Use a Pattern**  
 $1 \text{ kg} \approx 2.2 \text{ lb}$   
 $2 \text{ kg} \approx 4.4 \text{ lb}$   
 $7.7 \text{ kg} \approx 7.7 \times 2.2 \text{ lb}$   
 $\approx 16.94 \text{ lb}$   
 The 7.7-kg salmon has a mass of approximately 17 lb.

**Method 2: Use a Proportion**

1 kg	7.7 kg
2.2 lb	x lb
=	
1 kg	7.7 kg
2.2 lb	x lb
=	
x = 2.2 lb × 7.7 kg	
x = 16.94 lb	

The 7.7-kg salmon has a mass of approximately 17 lb.



**Method 1: Use a Pattern**

The pattern is to multiply by 2.2.

$7.7 \times 2.2 = 16.94$

**Method 2: Use a Proportion**

You can also set up a proportion.

$1 \text{ kg} \approx 2.2 \text{ lb}$   
 $7.7 \text{ kg} \approx x \text{ lb}$   
 $1 \text{ kg} \approx 2.2 \text{ lb}$   
 $7.7 \text{ kg} \approx x \text{ lb}$   
 $x = 2.2 \text{ lb} \times 7.7 \text{ kg}$   
 $x = 16.94 \text{ lb}$

b)  $1 \text{ lb} \approx 0.454 \text{ kg}$   
**Method 1: Use a Pattern**  
 $1 \text{ lb} \approx 0.454 \text{ kg}$   
 $2 \text{ lb} \approx 0.908 \text{ kg}$   
 $15 \text{ lb} \approx 15 \times 0.454 \text{ kg}$   
 $\approx 6.81 \text{ kg}$   
 The 15-lb salmon has a mass of approximately 6.8 kg.

**Method 2: Use a Proportion**

1 lb	0.454 kg
x lb	15 lb
=	
1 lb	0.454 kg
x lb	15 lb
=	
x = 0.454 kg × 15 lb	
x = 6.81 kg	

The 15-lb salmon has a mass of approximately 6.8 kg.

c)  $7.7 \text{ kg} \approx 6.8 \text{ kg} = 0.9 \text{ kg}$   
 The salmon caught in Shovel Harbour has a mass of 0.9 kg more.  
 $16.9 \text{ lb} - 15 \text{ lb} = 1.9 \text{ lb}$   
 The salmon caught in Shovel Harbour had a mass of about 2 lb more.

**Your Turn**

a) Ferdinando finds an online recipe for seafood chowder. It calls for  $\frac{1}{2}$  lb lobster meat,  $\frac{1}{4}$  lb fish fillets, and  $\frac{3}{8}$  lb clams. How many kilograms of lobster, fish fillets, and clams does he need to buy? Give your answers to the nearest tenth of a kilogram.

b) Ferdinando finds another recipe. The recipe for lobster stew calls for 0.5 kg lobster. How many pounds is that?

## Check Your Understanding

### Check Your Understanding questions follow each On the Job.

- The first part of this question set includes **Try It** questions. These questions check your knowledge and understanding of the On the Job. Most can be answered by following the example in the On the Job.
- Apply It** questions include problems from everyday life or the workplace. You need to apply the skills you learned in the On the Job to these situations.

**Check Your Understanding**

**Try It**

- Use your personal reference for 1 in. to approximate each length.
  - the width of this book
  - the length of an eyeglass case
  - the length of a pencil
  - the width of a calculator
- Measure each item in #1. How close were your approximations to the actual measurements?
- Use your personal reference for 1 ft to estimate each of the following lengths.
  - the width of a desk
  - the height of an electrical outlet
  - the width of the classroom door
  - the height of a light switch
- You may have measured some of the items in #3 already. If not, measure each item now. How close were your estimates to the actual measurement?
- Use measurement references to approximate each distance.
  - the length of a hallway at school
  - the length of a car
  - the length of a gym or other large room in the school
- Estimate the perimeter of the figure using an appropriate imperial unit.
 
  - Measure the perimeter.
  - How close was your estimate to the actual perimeter?

**Apply It**

- Charlotte uses her forearm as a reference for 1 foot. Using her forearm, estimate the width of the table.
- Estimate, to the nearest foot, the perimeter of your classroom.
- People often use parts of the body for measuring length. For example, the height of a horse is often stated by the number of "hands." One hand is the equivalent of 4 in. Work with a partner.
  - Estimate and then measure the span of your hand.
  - Estimate and then measure your stride. To be more accurate, measure 10 strides and calculate the average distance.
  - How many of your strides would it take to walk a mile?
- A hockey net is 6' wide. How could you use personal references to mark off a width of approximately 6 ft?
- George is a sheet metal worker and is installing ducts for a new furnace. He needs to install a piece to connect two different sized ducts. He measures the distance between the two ducts shown as  $6\frac{5}{16}$ .
  - Draw a line  $6\frac{5}{16}$  long.
  - George plans to cut the piece just a little bit longer than  $6\frac{5}{16}$  to ensure a proper fit. He can trim the piece when he is installing. How long should he cut the piece? Explain your reasoning.

**Topics of the Trade**

Sheet metal workers measure and cut sheet metal using power tools or by hand. They use metalworking machines to cut, punch, or straighten sheet metal. To learn more about sheet metal workers, go to [www.bls.gov/ooh/manufacturing/21-9133](http://www.bls.gov/ooh/manufacturing/21-9133) and follow the links.

2.1 Imperial Length Measurements • MHR 67

## Work With It

The end of each section has **Work With It** questions. To answer these questions, you may need to use knowledge and skills from more than one On the Job.

The **Discuss It** questions in this question set are communication questions.

- You may wish to discuss the questions with the class, in a group, or with a peer.
- Communicate your thoughts in the way that works best for you. This may be in writing, orally, or visually.

**Work With It**

- Judy works in a shop that replaces and repairs exhaust systems on vehicles. A certain exhaust pipe needs to be cut to a length of  $3\frac{1}{2}$ . Find a measuring tape and back it at this length. Compare your measurement with the one of a classmate. Are they the same? Explain.
- Wood trim goes around three sides of a door opening.
  - Use personal references to estimate the height and width of a door.
  - What is your estimate of the total length of trim needed?
  - Wood trim is sold in 8-ft and 12-ft lengths. How much trim would you buy?
- A carpenter is framing the outside walls of a building. How many studs will be used to frame the walls, if he uses 1 stud every 2 ft? Use the formula to estimate the number of studs. Add one end stud for each wall.
- Diego is calculating the perimeter of his bathroom floor. He plans to install tiles along the base of the walls that do not include the bathtub. He measures the width of the room to be 6 ft and the length to be  $9\frac{1}{2}$  ft. The door opening measures  $2\frac{1}{2}$  ft.
  - Diego calculates the total length that he needs to cover with tiles to be 25 ft. Is he correct? Explain.
  - The tiles Diego selects are 6 in. by 6 in. How many tiles does he need?

**Discuss It**

- Kelly jokingly says that she is "four-feet-nineteen." How tall is she?
- Explain how you might add  $6'11"$  and  $8'3"$ .
- On the imperial measuring tape, the marks that indicate fractions of an inch are different lengths. Explain.
- State three lengths that are often measured in imperial units. Include the units.
- For each length, state whether it is more appropriate to use an exact measurement or an approximate measurement. Justify your thinking.

2.1 Imperial Length Measurements • MHR 69

## Other Features

### F.Y.I.

The F.Y.I. boxes are “for your information”.


**F.Y.I.**  
When you exchange currency, you actually sell one currency and buy the other currency at the same time.

- These boxes provide additional info about items in the text.

**F.Y.I.**  
People believe that primitive rug hooking began in North America. Early settlers facing cold winds needed to keep their homes warm. They covered their floors with rugs made of worn out clothing.

- Some provide background information.

**F.Y.I.**  
When fishers measure rope length, they use their arm span to approximate 1 fathom. One fathom is about 6 ft.



- Many of these boxes include visuals which help explain a new word.

### Web Links

**Web Link**  
To find more information about expiry dates, go to [www.mhrmathatwork10.ca](http://www.mhrmathatwork10.ca) and follow the links.

You can find extra information related to some questions on the Internet. Log on to [www.mhrmathwork10.ca](http://www.mhrmathwork10.ca).

**Web Link**  
To explore surface area and nets of 3-D shapes, go to [www.mhrmathatwork10.ca](http://www.mhrmathatwork10.ca) and follow the links.

You will be able to link to recommended Web sites.

Some of these **Web Links** lead to interactive games and applets.


### Tech Links

**Tech Links** show what calculator keys to use for certain types of questions.

**Tech Link**  
If your calculator has a  $\pi$  button, Press  $\square$   $\pi$   $\square$  measurement of diameter  $\square$ .

- The Tech Link here shows how to calculate the circumference of a circle.
- Keys and key sequences may vary depending on the calculator make and model. Experiment or check with a classmate to find out what works on yours.
- Other Tech Links lead to online calculators.

**Tech Link**  
To calculate tax, CPP, EI, and other deductions online, go to [www.mhrmathatwork10.ca](http://www.mhrmathatwork10.ca) and follow the links.



**Tools of the Trade**  
Sheet metal workers measure and cut sheet metal using power tools or by hand. They use metalworking machines to cut, punch, or straighten sheet metal. To learn more about sheet metal workers, go to [www.mhrmathatwork10.ca](http://www.mhrmathatwork10.ca) and follow the links.

### Tools of the Trade

**Tools of the Trade** boxes provide information about careers mentioned in the text. Go online to [www.mhrmathwork10.ca](http://www.mhrmathwork10.ca). You will be able to link to Web sites that provide additional information about that trade. Some include videos of people on the job.

## Games and Puzzles

Have some fun! Two features encourage you to play with the math you are learning.

- A **Games and Puzzles** page at the end of each chapter provides entertaining activities that reinforce the skills you are learning.
- **Puzzler** boxes in some chapters are connected to the math in that chapter.

**Puzzler**

Which block is represented by the following net?

1      2      3

R A D  
I  
U  
S

## 2 GAMES AND PUZZLES

**Win 10**

1. Play cards with a partner or in a small group. These are the rules:
  - a) Remove the face cards from a deck of cards.
  - b) The dealer shuffles the cards and deals three cards, face up to each player.
  - c) Players use the values of their cards as the dimensions, in centimetres, of a rectangular prism.
  - d) Calculate the length and girth of your rectangular prism.
  - e) Each player who makes the calculation correctly scores a point. (You will need to check each other's work.)
  - f) The player with the greatest length and girth measurement scores an extra point for that round. If there is a tie, each of the tied players scores an extra point.
  - g) The first player to reach 10 points wins the game. If more than one player earns 10 points in the same game, these players continue playing until one of them pulls ahead.
2. Play a different version and use the cards to calculate the length and girth of a cylinder.
  - a) Deal only two cards to each player.
  - b) Use the values as the dimensions of a cylinder. The first card gives the radius. The second card gives the length.
  - c) Use a calculator to determine the length and girth measurement of your cylinder, to the nearest centimetre.
  - d) Award points and decide the winner in the same way as before.
3. Play a round of each version in which players need to convert centimetres to inches before calculating.
4. Discuss strategies you can use to help you win the game. Try your strategy.

**Materials**

- deck of playing cards
- calculator

*My cards are 4, 5, 3, and 8.*

$r = 4$   
 $l = 5$   
 $g = 2(4 + 3)$   
 $l = g = 24 \text{ cm}$

*My cards are 4 and 6.*

$r = 4$   
 $l = 6$   
 $g = 2(4 + 6)$   
 $l = g = 20 \text{ cm}$

Games and Puzzles • MHR 111

**Materials**

- SI measuring tape
- chalk
- watch
- outdoor measuring tool, such as an odometer, pedometer, trundle wheel, or measuring tape

**11. MINI LAB** Work in a small group to establish a personal reference for 1 kilometre. Use chalk to mark off a square on the ground that has side lengths of 25 m. For each group member, measure the time it takes to walk around the square once.

**STEP 1**  
Estimate how long it might take to walk 1 km.

**STEP 2**  
Measure actual times by having each group member walk at a normal pace 10 times around the square. Why might your estimate not be close to the actual time?

**STEP 3**  
Walk along a street or road for the same length of time that you took in step 2. Measure the distance using an outdoor measuring tool.

**STEP 4**  
List some places that are about 1 km from your school or home.

2.2 SI Length Measurements • MHR 79

## Mini Labs

**MINI LAB** Mini Labs in some chapters allow you to experiment with what you are learning.

- These include a **Materials** box in the margin. You need these items in order to do the activity.
- Work with a partner or in a small group. How does the activity help you with the math in the chapter?

## Skill Check

There is a **Skill Check** at the end of each chapter. This is a chapter review.

- The Skill Check starts with a **What You Need to Know** box. This lists the skills covered in the chapter. You can check what section each skill is in.
- The Skill Check is organized by section number. You can look back if you need help with a question.

## 1 Skill Check

**What You Need to Know**

Section After this section, I know how to...

- 1.1 calculate and compare unit prices
  - determine the best buy
  - analyze sales techniques
  - determine percent changes in prices
- 1.2 compare between Canadian currency and foreign currencies
  - estimate the cost of items from another country in Canadian currency
- 1.3 convert between imperial units and SI units of mass, capacity, and temperature
  - convert between imperial units of mass and capacity

*If you are unsure about any of these questions, review the appropriate section or sections of this chapter.*

**1.1 Unit Pricing, pages 6-17**

1. Sophie is shopping for coffee beans. She finds three sizes at the local grocery store, as shown.

- a) What is the price per 100 g for each brand of coffee?
- b) Which has the lowest unit price?
- c) What else should Sophie consider before she makes her purchase?

2. A grocery store sells 284-mL cans of beef stew for \$1.98.

- a) What is the unit price of the beef stew?
- b) The beef stew goes on sale for \$1.68. What is the new unit price?
- c) What is the percent decrease?

**1.2 Currency Exchange, pages 18-28**

Use the exchange rates in the following table for #3 and #4.

	to C\$	to US\$
US dollar (US\$)	0.69105	1.00000
can. \$	0.727323	1.32400

3. On November 7, 2007, the exchange rate from Canadian to US currency hit a record high: C\$1 was equal to US\$1.10.

- a) How much was C\$250 worth in US dollars?
- b) What did it cost in C\$ for a purchase of US\$75?

4. While shopping online, you find the following prices for a pair of ski goggles: US\$79 and \$53. You can purchase similar ski goggles at a local store for C\$85.

- a) What is the price in Canadian dollars for each of the ski goggles?
- b) Determine the total price, including tax, for the ski goggles at your local store.
- c) What else should you consider when buying ski goggles?

**1.3 Measurement Comparisons, pages 29-47**

5. Which is the larger amount?

- a) 2 qt milk, 7 cups milk
- b) 1.5 oz modelling clay,  $\frac{1}{2}$  lb modelling clay
- c)  $\frac{3}{4}$  cup beef broth, 2 fl oz beef broth

6. You will be travelling by car from Albany, New York, to Edmondson, New Brunswick. Gas costs \$2.75/gal that day in Albany. What will you pay for 1 L gas in Albany?

7. Carla arrives in Phoenix, Arizona, in July. That day, the temperature is  $107^{\circ}\text{F}$ . What is this temperature in Celsius?

Phoenix, Arizona  
Skill Check • MHR 49

## Test Yourself

The **Test Yourself** at the end of each chapter is a practice test.

- The Test Yourself includes multiple choice and extended response questions.
- It covers similar questions to what you can expect on a chapter test.


### 1 Test Yourself

Use the exchange rates in the following chart.

	€1	¥1
U.S. dollar	0.761051	1.09093
euro	1.31460	


For #1 to #3, select the best answer.

- Which of the following has the lowest unit price?
  - A 250 mL for \$1.58
  - B 500 mL for \$2.98
  - C 750 mL for \$4.15
  - D 1 L for \$6.40
- The standard oil barrel of 42 gallons is used in the United States as a measure of crude oil and other petroleum products. What is the closest equivalent in litres?
  - A 164 L
  - B 42 L
  - C 159 L
  - D 168 L
- You have C\$30. What is the closest equivalent in euros?
  - A €36.30
  - B €36.40
  - C €368.70
  - D €68.80
- The freezing point of water is 0°C. What is it in °F?
  - A) The boiling point of water is 212°F. What is it in °C?
- Write each pair of amounts with > or < between them.
  - a) 18 fl oz cream, 2 cups cream
  - b) 28 oz rice, 2 lb rice
  - c) 2 qt olive oil, 10 cups olive oil
  - d) 2 cup corn syrup, 1 fl oz corn syrup
  - e) 1 lb butter, four 4-oz packages of butter
- Henry sees that 950 g of ground beef is on sale at The Grocery Stop for \$8.98. At The Coat Club, 3.4 kg is selling for \$33.80.
  - a) Which package of ground beef has the lower unit price?
  - b) The Coat Club reduces the price of their ground beef to \$29.70. What is the percent decrease?
  - c) Which size has the lower unit price now?
  - d) What else should Henry consider when buying the beef?




7. Bruce is going to install a hot tub that he bought from a U.S. manufacturer.

- a) If the capacity is 500 gallons, what is the capacity in litres?
- b) The floor under a hot tub must be strong enough to support it. A 500-gallon hot tub is at least 4000 lbs. What is it in kilograms?
- c) The maximum recommended temperature for a hot tub is 104°F. What is this maximum in Celsius?




8. Tim's uncle and aunt are visiting Newfoundland from Maine. They decide to go for a drive to see some sights.

- a) During their drive, they stop for gas. They pay C\$48 for 45 L of gas. How many gallons of gas is that?
- b) What was the cost of gas per litre in Newfoundland that day?
- c) The last time they got gas in Maine, it cost US\$60 to fill their 19-gallon tank. How many litres of gas is this?
- d) What was the cost of gas per litre in Maine in U.S. dollars? in Canadian dollars?



9. Maria is shopping at the duty-free shop in La Guardia Airport, New York. She is buying perfume and chocolates. Show the unit price of each item in Canadian dollars using an SI unit of measurement.




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### 1 Chapter Project

**Plan a Party**

Max is in charge of buying food and drinks for a party at work. Help him plan what to serve and the costs of these items. There will be 30 people at the party. Also has a budget of \$250.

- Decide on the food and drinks that you plan to serve. The supplies for the party must include one recipe with imperial measures and one with SI measures. Two sample recipes are shown. You will find your own recipes.
- Calculate how much of each food item and drink you will need. Show the amounts you need in both measurement systems.
- Visit a grocery store to determine prices for the SI measurements.
  - a) Show the cost of each item.
  - b) Show the unit cost of each item.
  - c) Show the total cost of all of the items.
- Use the imperial units to check the prices online. Can you save money by buying some of the items in the United States? Show your thinking, including currency conversions.



**Fruit Punch**

125 mL sugar  
125 mL water  
500 mL apple juice  
250 mL orange juice  
75 mL lemon juice  
1 L orange sherbet

**Caramel Drink Mix**

8 cups popped popcorn  
4 cups cereal squares  
2 cups pretzel twists  
1 cup popcorn halves  
1 cup brown sugar  
½ cup butter  
¼ cup corn syrup  
1 teaspoon vanilla  
½ teaspoon baking soda

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## Chapter Project

Each Chapter Project requires you to use skills from the chapter. You will also need to use your creativity.

## Glossary

Refer to the illustrated **Glossary** starting on page 382 of the student resource. This provides the exact meaning of mathematical terms.