

Chapter 1 SE Answers

1 Consumerism and Travel

Get Ready, pages 4-5

- a) 12.8 b) 400 c) 0.10 d) 8
e) 20 f) 100 g) 299.02 h) 1.0
- a) 0.1 cm b) 1.27 ft c) 620 km d) 90.0 yd
e) 60 f) 11 g) 0.10 h) 1500
- a) \$0.68 b) \$35.99 c) \$7.00 d) \$44.34
e) \$1.85 f) \$0.11 g) \$10.00 h) \$0.00
- a) $0.02 > 0.0195$ b) $0.3 = 0.30$
c) $1.142 < 1.15$ d) $25.80 > 25.09$
e) $0.007 = 0.0070$ f) $6.98 > 6.9$ g) $11.01 < 11.10$
h) $0.25 > 0.249$
- a) 70 b) 72 c) 1 d) 20
e) 5 f) 0.1 g) 9 h) 100.0
- a) 1 L b) 1000 g c) 2600 mL d) 5.89 kg
e) 0.765 L f) 743.7 g g) 2 mL h) 0.038 kg
- a) Estimate: 180; actual: 188.1
b) Estimate: 165; actual: 167
c) Estimate: 1; actual: 1.14
d) Estimate: 3600; actual: 3780
e) Estimate: 50; actual: 49.875
f) Estimate: 30; actual: 33.22
- a) 14% b) 62% c) 88% d) 21%
e) 38% f) 2%

1.1 Unit Pricing, pages 6-17

On the Job 1

Check Your Understanding

- Examples: a) \$1.79 per pen b) \$1.80 per litre
c) 40¢ per can d) 0.6¢ per gram
- a) \$1.79 per pen b) \$1.8125 per litre
c) 41.625¢ per can d) 0.572¢ per gram
- a) \$1.35 b) \$2.64 c) \$1.80
- The case of 24 sports drinks for \$40.99 gives a unit price of approximately \$1.71. The 6-pack for \$12.39 gives a unit price of approximately \$2.07. The unit cost is lower for the case of drinks. The cost for 5 cases is \$204.95, and the cost for 17 6-packs is \$210.63. Instead, to get a total of at least 100 drinks, 4 cases and one 6-pack should be bought; this combination will total \$176.35.
- a) Lush Grow is \$4.29 for 8.8 L, giving a unit price of 48.75¢ per litre. Green Leaf is \$6.49 for 17 L, giving a unit price of approximately 38.18¢ per litre. Green Leaf has the lower unit price.
b) Example: Quality, budget, the amount needed, and the brand name can all affect a buyer's decision because of the plant's nutritional needs, the amount that the buyer is willing to spend on soil, the amount of soil needed to do the potting required, and the reputation of a specific company.

- a) Dog O'Meal: approximately \$3.21 per kilogram; The Gourmet Dog: approximately \$2.44 per kilogram; Tasty Choice: approximately \$2.20 per kilogram.
b) Examples: The quality of the dog food, whether the dog likes that food, the expiry date of the food.
c) Tasty Choice seems to be the best buy.
- a) In St. John's: bananas: \$1.66 per kilogram, milk: \$1.57 per litre, soup: 0.59¢ per millilitre; in an outpost: bananas: \$4.30 per kilogram, milk: \$2.54 per litre, soup: 1.02¢ per millilitre.

Item	Unit Price in St. John's	Unit Price in Outpost
bananas	\$1.66 per kg	\$4.30 per kg
milk	\$1.57 per L	\$2.45 per L
soup	0.59¢ per mL	1.02¢ per mL

- In an outpost, bananas cost \$2.64 per kilogram more than they do in St. John's, milk costs \$0.88 per litre more than it does in St. John's, and soup costs 0.43¢ per millilitre more than it does in St. John's.
- Examples: The cost of transportation of items to an outpost, and the smaller market means fewer sales so there are likely fewer special deals.
- a) A 4.5-kg package of Ice Buster costs \$9.99, giving a unit price of \$2.22 per kilogram. A 5-kg package of Melt Fast costs \$10.99, giving a unit price of approximately \$2.20 per kilogram. So, Melt Fast has the lower unit price.
b) Examples: Maggie may prefer to buy the Ice Buster because she does not need to go across town, and because it is an organic ice melter that may have a less negative impact on the environment.

On the Job 2

Check Your Understanding

- Examples: a) 100 g b) 100 g c) 1 kg d) 1 kg
- a) approximately 0.33¢ per gram
b) approximately 1.89¢ per gram
c) approximately \$2.92 per kilogram
d) approximately \$2.00 per kilogram
- a) original price: \$3.495 per kilogram; new price: \$2.995 per kilogram
b) original price: approximately 16.58¢ per tea light; new price: 20.75¢ per tea light
c) original price: approximately 1.22¢ per millilitre; new price: approximately 1.00¢ per millilitre
- a) oranges: \$1 decrease per bag; tea lights: \$0.50 increase per box; shampoo: \$2.01 decrease per bottle
b) oranges: 14% decrease; tea lights: 25% increase; shampoo: 18% decrease



- 5. a)** approximately \$0.69 per 100 mL; Example: 1 mL gives a very small price and it is more difficult to visualize.
b) 19.45¢ per 100 mL; Example: 1 mL gives a very small price and it is more difficult to visualize.
c) approximately 2.3¢ per millilitre; Example: 100 mL is a lot of toothpaste, and the amount used each time teeth are brushed is better expressed in millilitres.
6. Examples: **a)** 8 muffins for \$4.29 has the lower unit price; The first option gives a unit price of approximately \$0.54 per muffin; the second option gives a unit price of approximately \$0.58 per muffin, so the first option has the lower unit price.
b) 1 L for \$6.89 has the lower unit price; The first option gives a unit price of \$6.89 per litre; the second option gives a unit price of \$8.20 per litre, so the first option has the lower unit price.
c) \$2.99 for 8 dinner rolls has the lower unit price; The first option gives a unit price of \$39.8¢ per roll; the second option gives a unit price of 37.375¢ per roll, so the second option has the lower unit price.
d) \$11.99 for a 1.1-kg lasagne has the lower unit price; the first option gives a unit price of approximately \$11.04 per kilogram; the second option gives a unit price of approximately \$10.90 per kilogram, so the second option has the lower unit price.
7. a) \$17.50 per hour
b) Example: The hourly rate might entice a person to hire Margaret to clean their home more readily than the \$70 amount.
8. a) \$42.00 per square metre
b) \$43.20 per square metre **c)** approximately 3%
e) \$518.40
f) Example: In Newfoundland, HST totals 13%, so the cost with tax is \$585.79
9. a) OT Granola Bars
b) Good Grain Granola Bars; OT bars cost approximately \$1.33 per 100 g
c) Example: the price per bar makes OT bars appear to cost less but the weight is less.

Work With It

- 1. a)** \$0.89 per 100 g
b) Example: The price per kilogram is expensive, so the price per 100 g makes the salmon seem more reasonably priced.
2. a) juice boxes: approximately 30.4¢ per 100 mL; jugs of juice: approximately 24.2¢ per 100 mL
b) \$14.59 **c)** \$17.08
d) Example: The nutritional value of each juice, whether the children like both types of juice, and the time it takes to pour the juice from the jugs into the cups.

- 3. a)** Example: The second sign makes the discount look much bigger than the first sign's discount
b) approximately 18%
4. a) The first supplier has the lower unit price.
b) approximately 8%
c) the first supplier is still 10¢ cheaper per kilogram.
5. Example: Enviroprint costs \$2.25 per 100 sheets, Print Right costs approximately \$2.22 per 100 sheets, and Paper Work approximately \$2.00 per 100 sheets. I would buy the Paper Work paper because it is the best buy.
6. Example: Does the larger size have a much better unit price? Can I afford to buy the larger size today? Will I use all of the larger size before its expiry date? Do I have space to store the larger size?
7. a) \$31.20
b) Example: The unit price helps consumers compare prices for the same amount of a product, and the unit price shows consumers which product is a better buy.

1.2 Currency Exchange, pages 18–28

On the Job 1

Check Your Understanding

- 1. a)** US\$248.52 **b)** US\$428.88
2. a) C\$330.00 **b)** C\$270.00
3. a) £158.50 **b)** £153.25
4. a) C\$948.00 **b)** C\$1002.00
5. a) RD\$5595.00 **b)** RD\$5715.00
6. a) C\$134.00 **b)** C\$138.50
7. Proportion B because it shows the conversion rate, ¥1 over \$0.012134, and the equal ratio for ¥5670 over the unknown equivalent in dollars.
8. Example: France: C\$1 = €0.7274, so C\$500 = €363.70; Switzerland: C\$1 = CHF0.9711, so C\$500 = CHF485.55; Egypt: C\$1 = £5.8338, so C\$500 = £2916.90
9. C\$8.93
10. a) \$182.01 **b)** approximately ¥2472

On the Job 2

Check Your Understanding

- 1. a)** US\$431.11 **b)** €316.39 **c)** £268.26
d) ¥35 849.66
2. a) C\$257.30 **b)** C\$1.14 **c)** C\$303.35
d) C\$6972.62
3. £10
4. J\$4631
5. a) ¥3132 **b)** US\$487 **c)** C\$18 **d)** €1854
6. a) J\$10 039.48
b) First shop: C\$7.98; second shop: C\$8.13
c) No, unless the first shop is on her route back to her hotel; it is not worth backtracking to save 15¢.
7. a) C\$130.16
b) Example: Su Mei should probably not buy the used cell phone online, because she has no guarantee that it works properly. With a new phone, she will be able to return it if it does not work.



8. **a)** The Japanese helmet has the lowest price.
b) Example: The local store may be recommended because if it does not fit well, he may be able to return it.

Work With It

1. **a)** US\$138.75 **b)** C\$826.40
 2. The sweater cost C\$7.40 more in England.
 3. **a)** $\frac{\text{¥1}}{\text{C\$82.413}} = \frac{\text{¥3560}}{\text{C\$x}}$; ¥3560 = C\$293 390.28
b) Example: Another student may have written the proportion upside down, but would have got the same answer. This is just another form of the same proportion.
 4. Stewart made his purchases on different dates and the exchange rate changes day to day.
 5. Example: The dress costs less online, but she cannot try it on. If she trusts that she is a standard size, and that the style and colour will suit her, then the online purchase may be good. However, she may still have to pay for a local dress shop to alter the dress to fit her properly, and she may have to pay customs duty on an online purchase.
 6. Example: Knowledge of exchange rates is important so that you can estimate the price of items to decide if they are good buys or not, and so that you can be alert to anyone overcharging you.

1.3 Measurement Comparisons, pages 29–47

On the Job 1

Check Your Understanding

1. **a)** Estimate: 86 °F; actual: 82.4 °F
b) Estimate: 60 °F; actual: 59 °F
c) Estimate: 30 °F; actual: 32 °F
d) Estimate: 6 °F; actual: 10.4 °F
 2. **a)** Estimate: 22.5 °C; actual: 23.9 °C
b) Estimate: 12 °C; actual: 12.2 °C
c) Estimate: 1 °C; actual: 0 °C
d) Estimate: -15 °C; actual: -17.8 °C
 3. **a)** 88 °F = 31.1 °C, so 88 °F is warmer than 30 °C
b) 20 °C = 68 °F, so 20 °C is warmer than 67 °F
c) 49 °F = 9.4 °C, so 49 °F is warmer than 8 °C
d) -4 °C = 24.8 °F, so 25 °F is warmer
 4. **a)** -1 °C = 30.2 °F, so -1 °C is colder than 32 °F
b) -1 °F = -18.3 °C, so -1 °F is colder than -1 °C
c) 46 °F = 7.8 °C, so 46 °F is colder than 9 °C
d) 25 °C = 77 °F, so 25 °C is colder than 78 °F
 5. **a)** approximately -9 °C **b)** 60.8 °F
 6. **a)** approximately 92 °F **b)** approximately 33 °C
 7. **a)** average high: approximately 37 °F; average low: approximately 25 °F **b)** 12.2 °F
c) approximately 13 °C
 8. Examples: **a)** New York City **b)** December
c) and **d)** average: 5 °C or 41 °F.

On the Job 2

Check Your Understanding

1. **a)** Estimate: 1.5 kg; actual: 1.4 kg
b) Estimate: 17 kg; actual: 15.9 kg
c) Estimate: 450 kg; actual: 425.0 kg
d) Estimate: 61 kg; actual: 55.4 kg
 2. **a)** Estimate: 6 lb; actual: 7 lb
b) Estimate: 56 lb; actual: 62 lb
c) Estimate: 1 lb; actual: 1 lb
d) Estimate: 400 lb; actual: 434 lb
 3. **a)** Estimate: 900 g; actual: 992.2 g
b) Estimate: 600 g; actual: 595.3 g
c) Estimate: 400 g; actual: 396.9 g
d) Estimate: 7 g; actual: 7.1 g
 4. **a)** Estimate: 4 oz; actual: 3 oz
b) Estimate: 1 oz; actual: 1 oz
c) Estimate: 12 oz; actual: 13 oz
d) Estimate: 4 oz; actual: 4 oz
 5. 4.5 kg
 6. approximately 50.7 lb
 7. approximately 227 g
 8. **a)** approximately 170 g **b)** 1.5 lb

On the Job 3

Check Your Understanding

1. **a)** Estimate: 5 gal; actual: 5 gal
b) Estimate: 1250 gal; actual: 1321 gal
c) Estimate: 87 gal; actual: 92 gal
d) Estimate: 1 gal; actual: 1 gal
 2. **a)** Estimate: 75 L; actual: 75.7 L
b) Estimate: 1840 L; actual: 1858.6 L
c) Estimate: 325 L; actual: 329.3 L
d) Estimate: 1.8 L; actual: 1.9 L
 3. **a)** Estimate: 12 fl oz; actual: 14 fl oz
b) Estimate: 2 fl oz; actual: 3 fl oz
c) Estimate: 34 fl oz; actual: 34 fl oz
d) Estimate: 1 fl oz; actual: 1 fl oz
 4. **a)** Estimate: 1400 mL; actual: 1478.7 mL
b) Estimate: 900 mL; actual: 946.4 mL
c) Estimate: 500 mL; actual: 532.3 mL
d) Estimate: 6 mL; actual: 5.9 mL
 5. **a)** 83.3 L **b)** 50.7 fl oz **c)** 3.8 gal **d)** 88.7 mL
 6. 325.5 L
 7. The three friends weigh a total of 398 lb. Expressed in kilograms this sum is approximately 180.5 kg. Because the total is less than 200 kg, all three can go in one car.

On the Job 4

Check Your Understanding

1. **a)** $1\frac{3}{4}$ qt **b)** 56 oz **c)** $1\frac{3}{4}$ lb
d) 4 oz **e)** $\frac{5}{8}$ qt **f)** $\frac{7}{8}$ lb



2. a) 2 cups b) $4\frac{1}{2}$ cups c) $1\frac{3}{4}$ cups d) $\frac{1}{4}$ cup

3. a) 2 lb > 18 oz b) 12 cups = 3 quarts

c) 5 fl oz < $\frac{3}{4}$ cup

d) 12 oz < $1\frac{3}{4}$ lb e) 5 fl oz = $\frac{5}{8}$ cup

f) $1\frac{1}{8}$ quarts > $4\frac{1}{4}$ cups

4. Examples: a) An ounce is a small unit to measure a big item like a suitcase; 320 oz = 20 lb

b) A quart is a large unit for measuring such a small amount of milk; $\frac{1}{16}$ quart = $\frac{1}{4}$ cup, or

$\frac{1}{16}$ quart = 2 fl oz c) An ounce is a small unit to

measure that quantity of flour; 60 fl oz = $3\frac{3}{4}$ cups

d) This is an appropriate unit of measure.

e) An ounce is a small unit to measure that quantity of fertilizer; 672 oz = 42 lb

f) This is an appropriate unit of measure.

5. $1\frac{1}{2}$ lb

6. 12 oz of ground beef and 4 oz of sausage

7. 2 fl oz

8. 12 bottles

Work With It

1. a) 2.8 L b) 118.3 mL c) 2.7 fl oz d) 59.5 lb
e) 113.4 g f) 68 oz g) 15.8 °F h) 26.1 °C

Ingredient	Imperial Measurement	SI Measurement
Tortilla chips	8 oz	226.8 g
Cheddar cheese, grated	1 c	236.6 mL
Monterey Jack cheese, grated	1 c	236.6 mL
Onions, thinly sliced	3	3
Olives, finely chopped	3 tbsp	44.4 mL
Cayenne pepper	$\frac{1}{4}$ tsp	1.3 mL
Salsa	$\frac{3}{4}$ c	177.4 mL
Sour cream	$\frac{3}{4}$ c	177.4 mL

3. a) 24.476 °F b) 10.94 °F

4. a) \$1.03 per litre

b) \$3.75 per gallon

c) St. John's appears to have the lower unit price, assuming that both prices are shown in the same currency.

5. a) 6 fl oz = approximately 177 mL, so the bottles in New York are smaller than the size that Laura requested.

b) Laura asked for 888 mL. Five of the 177-mL bottles is approximately 888 mL, so Kendra should send 5 bottles.

6. a) approximately 397 g

b) The chocolate in Halifax costs approximately \$1.13 per 100 g, so it has the lower price.

c) 3.5 lbs; approximately 1.6 kg

7. Examples:

Item	Imperial Unit	SI Unit
Mass of a car	tons	tonnes
Capacity of a swimming pool	gallons	litres
Mass of a bag of apples	pounds	kilograms
Amount of cough syrup	fluid ounces	millilitres

8. Example: The SI system is based on standard multiples of 10 so it is much easier to convert from one unit to another. For example, 1 kg = 1000 mL, so 2.5 kg = 2500 mL. In the imperial system you have to learn equivalents, such as 16 oz = 1 lb, and it is more difficult to multiply or divide by 16 to convert between ounces and pounds.

Skill Check, pages 48-49

1. a) Perfect Roast: approximately \$3.00 per 100 g;

Morning Glory: \$2.58 per 100 g; Best Brew:

\$2.40 per 100 g b) Best Brew

c) Example: Sophie should consider which coffee she likes best, how much she can afford to spend on coffee, and how much storage space she has at home.

2. a) approximately \$0.697 per 100 mL

b) approximately \$0.592 per 100 mL

c) approximately 15%

3. a) US\$275 b) C\$68.18

4. a) from U.S.: C\$79.71; from Europe: C\$72.87

b) Example: Including 13% HST, the local goggles cost \$96.05.

c) Example: The goggles from Europe are a bit cheaper, but with shipping costs and import duty they may not be cheaper than the local ones. Also, Owen can see the goggles at the store, and maybe try them on to make sure they fit well before buying them.

5. a) 2 qt of milk b) $1\frac{1}{4}$ lb of modelling clay

c) $\frac{1}{3}$ cup of beef broth



- 6. approximately US\$0.727 per litre
- 7. approximately 41.7 °C

Test Yourself, pages 50–51

- 1. C
- 2. C
- 3. B
- 4. a) 32 °F b) 100 °C
- 5. a) 18 fl oz of cream > 2 cups of cream
- b) 28 oz rice < 2 lb rice
- c) 2 qt olive oil < 10 cups olive oil
- d) $\frac{1}{4}$ cup corn syrup > 1 fl oz corn syrup
- e) 1 lb of butter < four 8-oz packages of butter

- 6. a) 950-g package b) 10% c) 3.4-kg package
- d) Example: Henry should consider how much storage space he has, as well as the quality of meat.
- 7. a) approximately 1893 L
- b) approximately 1814 kg c) 40 °C
- 8. a) approximately 11.9 gal
- b) approximately \$1.07 per litre
- c) approximately 71.9 L
- d) US\$0.83 per litre; C\$0.84 per litre
- 9. a) C\$36.19 per 100 mL b) C\$80.02 per kilogram

