

# 1.9 Comparing Apples to Apples

Focus: purchasing multiple items, calculating unit costs

## Warm Up

<p><b>1. a)</b> Draw quarters to make <math>\frac{1}{2}</math> of a dollar + <math>\frac{1}{4}</math> of a dollar.</p> <p><b>b)</b> What fraction of \$1.00 is this amount of money?</p>	<p><b>2.</b> Use your answer to #1 to help add <math>\frac{1}{2} + \frac{1}{4}</math>.</p>
<p><b>3.</b> Danielle brings in granola bars in boxes of 6 to share with her class. She has 24 people in her class. How many boxes does she need?</p>	<p><b>4.</b> You purchase school supplies totalling \$13.95. How much tax will you pay on these items?</p>

### Buying Multiple Items

- The student council is organizing a dance.
- For the snack bar, they need to buy some drinks and snacks.



- 1.** They must first determine how many cases of each item to buy.

They need 40 juice boxes. Each case contains 8 boxes.

$$\begin{array}{r} \text{Number of} \\ \text{Cases Needed} \end{array} = \frac{\text{Total Amount}}{\text{Needed}} \div \begin{array}{r} \text{Number in} \\ \text{One Case} \end{array}$$

$$= \frac{\quad}{\quad} \div \frac{\quad}{\quad}$$

$$= \frac{\quad}{\quad}$$

2. Before buying the items, the students give the student council treasurer an estimate of the money they need. Complete the table to estimate the cost of each item.

Item	Total Amount Needed	Number of Cases Needed	Price Per Case Rounded to Nearest Dollar	Estimated Cost
a) Juice boxes	40			
b) Water bottles	100			
c) Popcorn bags	24			
d) Granola bars	60			

3. Estimate the total cost including HST.

4. Use the information from the above table to help determine the actual amount the students will spend. Complete the following table.

Item	Number of Cases Needed	Price Per Case	Cost
Juice boxes		\$2.39	
Water bottles		\$3.88	
Popcorn bags		\$7.20	
Granola bars		\$3.30	
<b>Subtotal</b>			
<b>Tax</b>			
<b>Total</b>			

What is a  
subtotal?

5. Is your estimate of the money needed in #3 reasonable? How close are you to the actual total?
- \_\_\_\_\_
- \_\_\_\_\_

6. The students gave the cashier \$100.

a) How much change should they expect back?

b) Show the combination of coins and bills they might receive.

### Comparing Unit Prices

1. At the grocery store, the members of the student council notice that they have a choice to make when purchasing granola bars. Which is the better buy? Explain how you know.



2. Besides price, what other things might people consider when choosing items to buy?
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- One way to compare prices is to calculate the **unit price** of an item.
- Unit price is the price for just one item.

What is a **unit price**?

### Example

A box of 10 pencils costs \$2.50.  
Determine the unit price.

### Solution

The unit price is the price of one pencil.

$$\begin{aligned} \text{Price of One Pencil} &= \text{Price of Box of Pencils} \div \text{Number of Pencils in Box} \\ &= \$2.50 \div 10 \\ &= \$0.25 \end{aligned}$$

The price of one pencil is \$0.25 or \_\_\_\_\_ ¢.

The unit price is \$0.25 per pencil.

To calculate unit price:

$$\text{Unit Price} = \text{Price of All the Items} \div \text{Number of Items}$$

3. Calculate the unit price for each item.
- A package of 10 pens costs \$3.20.
  - A package of 3 tennis balls costs \$4.50.
  - A bag of 12 oranges costs \$3.48.

4. The student council finds some options for juice boxes. For each option, determine the unit price (price of one juice box).

Round to the nearest thousandth means round to 3 decimal places.

Option	Unit Price (round to nearest thousandth)
Option 1: Package of 8 juice boxes for \$1.99	
Option 2: Package of 10 juice boxes for \$2.39	
Option 3: Package of 30 juice boxes for \$6.89	

5. Which option is the better buy? How do you know?

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6. Why do you think it is important to look at more than just 2 decimal places?

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7. Is the lowest unit price always the better buy? What else should the student council consider when choosing an option?

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8. For each of the items in the table, 2 options are given.  
Calculate the unit price for each option.  
Circle the lowest unit price for each option.

Option 1	Unit Price	Option 2	Unit Price
a) 10 pencils for \$2.49		12 pencils for \$2.89	
b) 1 pack of gum for \$0.89		4 packs of gum for \$3.49	
c) 1 chocolate bar for \$0.97		12 chocolate bars for \$8.49	
d) 8 granola bars for \$2.79		12 granola bars for \$4.23	
e) 1 can of soup for \$0.80		10 cans of soup for \$6.49	

### Check Your Understanding

Describe in your own words how to determine the better buy.

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