

Name: _____ Block: _____

Unit 4 – Working with Money

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4.1 Unit Price and Best Buy

When you are shopping, you often face the dilemma of determining which is the best price. Food items, especially, come in different sizes for different prices. Finding the **unit price**, the amount of money per unit of an item, can help you to determine which you should buy.

Examples

Ex 1. Find the unit price of the following:

- a) \$3.99 for 12 cans of pop b) \$1.69 for 8 oranges c) 50 g of chips for \$0.99

Ex 2. A 300 g package of pepperoni costs \$4.29.

- a) What is the cost per 100 g?
- b) How much would 1 kg of pepperoni cost?

Ex 3. Which is the better buy:

- a) 5 oranges for \$1.65 or 8 oranges for \$2.77?
- b) 400 mL of ketchup for \$2.89 or 900 mL for \$4.98?

4.1 Practice

1. Calculate each unit price.
 - a) 12 eggs for \$3.24
 - b) \$35.16 for 40 L of gas
 - c) \$78.75 for 3.5 kg of pecans

2. Raymond needs to order crushed rock for a courtyard. What is the cost of 4.5 tonnes at \$12.50 per tonne?

3. One brand of salsa is \$5.95 for 650 mL and another is \$4.10 for 350 mL.
 - a) What is the price per millilitre for each brand?

 - b) What is the price per 100 mL for each brand?

4. Tanya found these prices for tomato juice:

A: 600 mL for \$2.49 B: 750 mL for \$2.99 C: 250 mL for \$0.89

Which size sells for the lowest unit price? Show your work.

5. Determine the lower unit price:

a) 2000 nails for \$54.99 or 5000 nails for \$119.99

b) Swiss Cheese at \$4.59 for 170 g or Havarti at \$2.29/100 g

c) Yogurt: 650 g for \$2.99 or 800 g for \$5.59

d) 3.78 L of house paint for \$39.95 or 0.5 L for \$6.49

6. Frank is a locksmith who owns his own business. He buys a case of 144 bulk brass padlocks for \$244.97. He sells each lock for \$5.50.

a) How much does each lock cost Frank? Round to the nearest cent.

b) How much profit does Frank make when he sells one lock?

4.2 Best Buy – Different Units

Sometimes it is more difficult to compare the price of items since they are in different units, such as meat which can be listed as a price per pound or per kilogram. We need to use unit conversions to be able to fairly compare the unit prices.

Examples

Ex 1. Which is the better buy:

a) 2 L of lemonade for \$2.56 or 900 mL for \$1.20?

b) Chicken breast at \$2.18/lb or \$4.99/kg?

c) Fencing at \$23.95/m or \$6.99/ft?

4.2 Practice

1. Henry needs a small amount of paint for a bathroom wall. He can pay either \$32.97 for 3.8 L of paint or \$7.49 for 950 mL. Which would be the better buy? Show your work.
2. The cost of a 355 mL can of juice is \$1.25 in a vending machine. A 1.89 L carton of the same juice costs \$3.89 at the grocery store. How much would you save per 100 mL if you bought juice from the grocery store instead of the vending machine? Round to the nearest cent.
3. Which is the better unit price?
 - a) Pop at \$1.99 for 2 L or \$0.55 for 355 mL
 - b) Beef at \$4.99/lb or \$8.50/kg
 - c) Rope at \$2.19/yd or \$2.48/m

4. Lisa labels her meat prices per pound. Jordan labels his meat prices per kilogram. Calculate the equivalent unit price for each. Show your work.

Rib steak: \$8.80/lb \$ _____/kg

Sirloin roast: \$ _____/lb \$7.59/kg

5. Organize the following items from highest to lowest unit price:

- I 500 g for 84¢
- II 3.1 kg for \$4.02
- III 2.9 kg for \$3.90

6. Find the price per pound if 2.5 kg of rice costs \$12.

7. a) What are some factors to consider when looking for the best buy?

b) Is the cheaper option always the best buy? Explain your thinking.

4.3 Sales Tax and Price Markups

We pay sales tax on most items in BC. The provincial sales tax (PST) is _____ while the goods and services tax (GST) is _____.

Prices for goods and services rise and fall due to consumer supply and demand. The cost of materials and labour also contribute to price adjustment. An additional amount, called **markup**, is added to these costs so that a **profit** can be made. The markup is usually a percent of the wholesale price.

Examples

Ex 1. A furniture store in BC is selling a bedroom suite. The list price for the suite is \$1599.00.

a) What will the total cost be including GST and PST?

b) How can you find the total cost with tax in one step?

Ex 2. Kelsea is purchasing fabric at a wholesale price for her custom sewing business. She pays \$46.00/m for the fabric. Her markup is 20% of the fabric cost. What will Kelsea charge her client per meter?

Ex 3. John spent \$2500 on a used car and parts needed to fix it up. If he sold it for \$3700, what percent profit did he make?

4.3 Practice

1. A jacket is listed at \$99.95.
 - a) If you live in Alberta, where the only tax is 5% GST, what would you pay for the jacket?

 - b) What would you pay in BC?

2. Saskatchewan charges 5% GST and 6% PST.
 - a) How much tax would Krista pay on a can of paint priced at \$45.89?

 - b) What is Krista's total cost for the paint?

3. In one year, prices in Canada's housing market increased by 5.2%. If a house sold for \$335 000 at the beginning of the year, what could it sell for at the end of that year?

4. Alysha restored an old motorcycle. She paid \$26 000, spent \$3500 on repairs, and sold it for \$37 000. What percent profit did she make, to the nearest tenth of a percent?

5. The markup on a bicycle in a sporting goods store is 110%. The bicycle's wholesale price is \$450.00.
 - a) What is the markup amount in dollars?
 - b) What is the new price of the bicycle?
6. Because the cost of ingredients has gone up, Maurice has decided to increase the cost of meals in his restaurant by 12%. How much will he now charge for a grilled salmon fillet that originally cost \$17.95?
7. What should Max charge for a package of paper plates in his store if he bought them for \$9.00 and wants to make a 75% profit?
8. If the markup is 125% on a certain brand of jeans that have a wholesale price of \$30.00, what will the consumer pay, if GST and PST are each 5%?
9. Garth buys snow tires from a dealer in Thunder Bay, ON. The tires cost \$79.00 each. To make a profit, he must mark them up 40%. How much must a customer pay for 4 tires if there is a 12% tax on the final sale?

4.4 Discounts and Sales

Examples

Ex 1. Sally buys a new smartphone to replace the one she accidentally dropped in her pool. An unlocked smartphone costs \$499 but today only is 15% off.

a) What is the new price of the phone before tax?

b) What is the final price, including tax?

Ex 2. In one step, how can you calculate the sale price of a \$19.99 t-shirt that is 25% off?

Ex 3. To the nearest tenth of a percent, what is the percent discount if a \$175 portable Bose speaker is on sale for \$150?

4.4 Practice

1. Complete the chart for these sales offers.

Item	Original Price	Discount	New Price
Computer	\$679.99	15%	
Sofa	\$500.00	$\frac{1}{4}$ off	
Snowboard	\$455.95	60%	
Shoes	\$72.95	20%	

2. This camera costs \$999.90, but today it is 45% off.

a) Determine the sale price.



b) Determine the final price with the addition of 12% tax.

3. You go to Lids.com and buy a Detroit Tigers hat for \$29.79, but there is a discount of 15%. Determine the final price including PST and GST (you are in BC).



4. How much will Jordan **save** on the price of a computer listed at \$989.98 if it is discounted by 30%?

5. Day-old goods at the bakery are sold at 60% off. If the original price of a loaf of sweet bread was \$2.98, how much would you pay for a day-old loaf?

6. A store advertises that if you buy 3 items, you will get 15% off the most expensive item, 20% off the second most expensive, and 30% off the least expensive item. You choose three items costing \$10.00, \$25.00, and \$12.00. How much will you pay for the three items (ignore tax)?

Most expensive:

Second most expensive:

Least expensive:

Total:

7. Normally, Charlie charges \$75.00 to paint **one** room. However, if he paints 3 or more rooms for you, he gives you a 15% discount. How much will he charge if he paints **4 rooms** for you?

8. What is the percent discount if a \$169 item sells for \$92.95?
9. Zoe is opening an organic greenhouse. She paid \$130 wholesale for gardening tools worth \$200 retail. What was the percent discount for the tools she bought?
10. The wholesale cost of a tawa, a griddle used to cook Indian flatbread, is \$53.00. A merchant marks it up 65%. At the end of the season, he sells the remaining stock at 60% off.
- a) What was his original asking price?
- b) What was the end-of-season sale price?
- c) How much would a customer pay at the end of the season, including 5% GST and 7% PST?

4.5 Analyzing Sales Promotions

Examples

Ex 1. Kristin is buying six watches as gifts for her friends. The store has two promotions to choose from for watches with a regular price of \$12 each:

- The real deal: buy one, get one half price
- The big discount: $\frac{1}{3}$ off the purchase

Which promotion should Kristin choose?

4.5 Practice

1. Nikki needs 8 new sets of linens for her massage therapy business. She checks out the sales at two different stores.

- Bedding & More: Buy 1 get 1 free; Regular price \$32.50/set
- Lydia's Linens: 40% off regular price of \$26.49

a) How much do 8 sets of linens cost at each store?

b) Which store offers the better price?

2. Allison is a freelance graphic designer. She needs to buy a new computer for her business. Two stores offer promotions on the same computer.

- \$2899 with a discount of 20%
- \$2779 with a \$250 mail-in rebate

Which is the better price?

3. Trey is going to a technical school in the fall and needs to rent an apartment. He finds two apartments that he likes.

- Apt. 1: \$700/month
- Apt. 2: \$775/month with the first month free

If Trey needs the apartment for 12 months, which apartment would cost the least?

4. Samantha needs to rent a vehicle to drive from Invermere, British Columbia, to Lethbridge, Alberta, and back. The total distance for the round trip is 607 km and will take two days.

- RentCar: \$45.99/day with unlimited mileage
- Car Bud: \$15.85/day plus \$0.12/km

Calculate the cost of the vehicle rental for each company.

5. Dalton is trying to attract more members to his gym. Memberships usually cost \$649/year with a sign-up fee of \$75. He offers two promotions:

- Fitness promotion: no sign-up fee
- Strength promotion: 15% off the total fee

Which promotion is less expensive for a 12-month membership?

6. Trevor has two offers to consider for lift passes for snowboarding at his favourite hill. The regular price for a lift pass is \$87.

- Jump offer: buy one get another at half off
- Rail offer: 20% off each pass

a) If Trevor wants to buy 10 lift passes, which offer is a better price?

b) If Trevor wants to buy 2 lift passes, which offer is a better price?

4.6 Currency and Exchange Rates

Different countries use different **monetary units** and/or different **currencies**. It is important when travelling to consider **exchange rates**, or the value of one monetary unit compared to another.

Examples

Ex 1. Tosh purchased \$500.00 CAD worth of parts from Hungary for use in his garage. If the exchange rate is one Canadian Dollar to 212.66 Hungarian Forints (Ft), how many Forints will you receive for \$500.00 CAD?

Ex 2. One Thai Baht is worth \$0.039 CAD. How many Bahts would a tourist in Thailand receive for \$200.00 CAD?

Ex 3. Nate works for an automotive parts distributor and visits Switzerland to source new products. On a given day, the CHF/CAD bank selling rate is 1.0501 (this means 1 Swiss Franc (CHF) = \$1.0501 CAD) and the buying rate is 1.0213.

a) How many Swiss Francs would Nate receive for \$400.00 CAD?

b) If Nate sold the Swiss Francs back to the bank that same day, how much Canadian would he receive?

c) What would his net loss be?

4.6 Practice

1. Using the following exchange rates, calculate how much foreign currency you would receive for \$200.00 CAD. Round to 2 decimal places.
 - a) \$1.00 CAD is worth 1.72904 Brazilian Reals (BRL)
 - b) \$1.00 CAD is worth 8.71137 Moroccan Dirhams (MAD)
 - c) \$1.00 CAD is worth 7.72277 Ukrainian Hryvnia (UAH)
 - d) \$1.00 CAD is worth 3.19889 Polish Zloty (PLN)
2. Calculate the value in CAD of an item that costs \$449.75 Singapore Dollars (SGD). Assume the SGD/CAD exchange rate is 0.75529 (remember this means that 1 SGD = \$0.75529 CAD).
3. Damien is training to become a customer service representative at a credit union. Given the following exchange rates, calculate how much foreign currency Damien would give to a customer who wished to convert \$500.00 CAD. Round to 2 decimal places.
 - a) Mexican Peso (MXN)/CAD: 0.0812
 - b) Estonian Kroon (EEK)/CAD: 0.0940
 - c) British pound (GBP)/CAD: 1.3376

4. If the selling rate of a euro (€ or EUR) is 1.4768 and the buying rate is 1.4287, how much would you lose if you exchanged \$1000 CAD for euros and then converted them back to \$CAD on the same day?

5. If the NOK (Norwegian Krone)/CAD exchange rate is 0.1736, what would the price be in Canadian Dollars of an item that costs 275 Kroner?

6. A hand-woven shawl costs 35 Botswana Pula (BWP). How much does it cost in Canadian dollars if the exchange rate is 0.1515?

7. Sebastian is shopping in Spain and wonders if a sweater priced at €49 is reasonable compared with a similar \$80 sweater he bought in BC. Compare the prices in Canadian Dollars if the EUR/CAD exchange rate is 1.45.

ANSWERS

Section 4.1

1. a) \$0.27/egg
b) \$0.879/L
c) \$22.50/kg
2. \$56.25
3. a) \$0.009.../mL and \$0.011.../mL
b) \$0.92/100 mL and \$1.17/100 mL
4. C has the lowest unit price
5. a) 5000 nails
b) Havarti
c) 650 g
d) 3.78 L
6. a) \$1.70
b) \$3.80

Section 4.2

1. 950 mL can has lower unit price
2. Save \$0.14 per 100 mL
3. a) \$1.99 for 2L
b) \$8.50/kg
c) \$2.19/yd
4. Rib steak is \$19.36/kg
Sirloin roast is \$3.45/lb
5. Highest to lowest: I, III, II
6. \$2.18/lb
7. a) unit price, quantity needed, expiry date, etc.
b) No. For example, a larger container may not be a smart choice if you can't use it before it expires.

Section 4.3

1. a) \$104.95
b) \$111.94
2. a) \$5.05
b) \$50.94
3. \$352 420
4. 25.4% profit
5. a) \$495 markup
b) \$945
6. \$20.10
7. \$15.75
8. \$74.25
9. \$495.49

Section 4.4

1. Computer: \$577.99
Sofa: \$375
Snowboard: \$182.38
Shoes: \$58.36
2. a) \$549.95
b) \$615.94
3. \$28.36
4. \$296.99
5. \$1.19
6. \$37.85 total
7. \$255
8. 45%
9. 35%
10. a) \$87.45
b) \$34.98
c) \$39.18

Section 4.5

1. a) B&M: \$130
Lydia's: \$127.15
b) Lydia's Linens
2. 20% discount is better (\$2319.20 vs. \$2529)
3. Apartment 1 is cheaper (\$8400 vs. \$8525)
4. RentCar: \$91.98
Car Bud: \$104.54
5. Strength promotion is cheaper (\$615.40 vs. \$649)
6. a) Jump offer is cheaper (\$652.50 vs. \$696)
b) Jump offer is still cheaper

Section 4.6

1. a) 345.81 BRL
b) 1742.27 MAD
c) 1544.55 UAH
d) 639.78 PLN
2. \$339.69 CAD
3. a) 6157.64 MXN
b) 5319.15 EEK
c) 373.80 GBP
4. \$32.57
5. \$47.74 CAD
6. \$5.30 CAD
7. \$71.05 CAN for the sweater in Spain (a bit cheaper than the \$80 in BC)