

Warm up!!!



1. Many big screen TV's have an aspect ratio of 16:9. This means that for every 16 inches of width, the TV will be 9 inches high. Calculate the height of a TV that is 27 inches wide.
2. The cost of a pack of 4 hamburgers is \$4.89, the cost of a pack of 12 buns is \$1.29, and the cost of 24 slices of cheese is \$3.69. What is the cost of 5 cheeseburgers? (1 hamburger, 1 slice of cheese, and 1 bun)



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$\frac{\text{height}}{\text{width}}$ $x = \text{height}$

$$\frac{x}{27} = \frac{9}{16}$$

$$x = \frac{9(27)}{16}$$

$$= 15.2 \text{ inches high}$$

The height of the TV would be 15.2 inches.



$$\begin{aligned} \text{hamburger } \frac{4.89}{4} &= \$1.22 \\ \text{bun } \frac{\$1.29}{12} &= \$0.11 \\ \text{cheese } \frac{\$3.69}{24} &= \$0.15 \\ \text{1 item} &= \$1.48 \end{aligned}$$

2.

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(1 hamburger, 1 slice of cheese, and 1 bun)

$$\begin{aligned} 5 \text{ burgers} &= 5 \times \$1.48/\text{burger} \\ &= \$7.40 \end{aligned}$$



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Hamburger	Bun	Cheese	One Burger:	\$1.22
<u>4.89</u>	<u>1.29</u>	<u>3.69</u>		0.11
4	12	24		<u>0.15</u>
1.2225	0.1075	0.15375		\$1.48
\$1.22 _{/h}	\$0.11 _{/b}	\$0.15 _{/c}	Five Burgers:	\$1.48 × 5 = \$7.40

Five cheeseburgers would cost \$7.40.

MATH ON THE JOB

Maurice Meagher is the owner of Case Handyman and Remodeling, a business that performs renovation, remodeling, building, and designing services in Halifax, Nova Scotia. Maurice grew up in Port Hawkesbury, NS, where he went to high school at the Strait Area Education Recreation Center.

Maurice's job includes drawing up yearly and monthly budgets. He also calculates averages of past sales to help him forecast changes in staffing and cash flow. Another important part of Maurice's job is estimating how much it will cost to complete different building, renovation, or remodeling projects.

Maurice is estimating the cost of remodeling the floors of a home. He calculates that the floor space measures 1500 square feet. He determines that the cost of the entire job, including labour and materials such as ceramic tile and grout, will be \$27 000.00. What is the cost per square foot for the remodeling?



Maurice's job involves estimating the cost of building decks and sunrooms.

$$\begin{aligned} \text{Cost per square foot} &= \frac{\$27\,000}{1500} \\ &= \$18/\text{ft}^2 \end{aligned}$$

SOLUTION

What is the cost per square foot for the job?

$$\frac{\$27\,000.00}{1500} = \$18.00/\text{sq. ft.}$$



Setting a Price



SUPPLY/DEMAND:

- demand rises...cost increases.
- demand falls (or over supplied)...cost decreases.

Markup

The difference between the amount a dealer sells a product for and the amount he or she paid for it.

Percent

Percent means "out of 100"; a percentage is a ratio in which the denominator is 100.

The markup is usually a percent.

What's in a price???

- \$39.99 seems less expensive than \$40.
- price / 100 g rather than price / kg.
- weekly payments rather than monthly.

EX: The markup of the T-shirts is 25%. If the cost of making a T-shirt is \$8, determine the selling price...

There are two ways to calculate the selling price.

<p>1. Cost x Percent $\\$8.00 \times 0.25$ $\\$2.00$</p> <p>2. Cost + Markup $\\$8.00 + \\2.00 $\\$10.00$</p>	<p>OR</p>	<p>Cost x Percent $\\$8.00 \times 1.25$ $\\$10.00$</p> <p style="color: red; font-size: small;">Includes 100% of the original price and the 25% mark up.</p>
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What else affects selling price?



Goods and Services Tax

	GST	PST	HST
NS			15%
NB			15%
NFLD			15%
PEI			15 %



Provincial Sales Tax



Harmonized Sales Tax

Retail Buying

<http://www.calculconversion.com/sales-tax-calculator-hst-gst.html>

Sales Tax - Provincial (PST) / Goods & Services (GST)

GST is 5 %

Province	Type	PST (%)	GST (%)	HST (%)	Total Tax Rate (%)	Notes:
Alberta	GST		5		5	
British Columbia	GST + PST	7	5		12	As of April 1, 2013, the HST rate no longer applies in British Columbia.
Manitoba	GST + PST	8	5		13	
New Brunswick	HST			15	15	As of July 1, 2016 the HST rate increased from 13% to 15%.
Newfoundland and Labrador	HST			15	15	As of July 1, 2016 the HST rate increased from 13% to 15%.
Northwest Territories	GST		5		5	
Nova Scotia	HST			15	15	
Nunavut	GST		5		5	
Ontario	HST			13	13	
Prince Edward Island	HST			15	15	
Quebec	GST + PST	*9.975	5		14.975	
Saskatchewan	GST + PST	5	5		10	
Yukon	GST		5		5	

Finding the tax...

$$\text{Amount of Tax} = \text{Regular Price} \times \text{Tax (as a decimal)}$$

$$\text{Total Cost} = \text{Regular Price} + \text{Tax}$$

Find total cost...

Shortcut to calculating tax?

Multiply by 1.13

Find the total cost (including HST) for each of the following...

CANADIAN TIRE

1/2 price 239.79 → $239.79 \times 1.13 = 270.9627$ Cost?

1/2 price 39.96 → $39.96 \times 1.13 = 45.1548$ Cost?

1/2 price 48.88 → $48.88 \times 1.13 = 55.2344$ Cost?

NAVIGATOR Starting at \$48,745 → $48745 \times 1.13 = 55081.85$ Cost?

$48745 \times 1.13 = 6336.85$ Amount of tax?

\$26 554
(NB, NFLD)

OR

<p>1. Cost x Percent (tax)</p> $\$26\,554 \times 0.15$ $\$3983.10$ <p>2. Cost + Tax</p> $\$26\,554 + \3983.10 $\$30\,537.10$	<p>Cost x Percent</p> $\$26\,554 \times 1.15$ $\$30\,537.10$
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\$26 554
(two steps)

GST

1. Cost x Percent (GST tax)

$$\$26\,554 \times 1.05$$

$$\$27\,881.70$$

PST

Cost with GST x Percent (PST tax)

$$\$27\,881.70 \times 1.08$$

$$\$30\,112.24$$



Arlene purchases fabric at a wholesale price for her custom sewing business in Cavendish, PEI.

She pays \$46.00/m.

She charges a markup of 20% on the fabric.

What will Arlene charge her clients per metre?



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$$\begin{array}{l}
 \text{Markup} \quad 46 \times 0.20 = \$9.20 \qquad 46 \times 1.20 = \$55.20 \\
 \text{Cost} \quad \quad 46 + 9.20 = 55.20 \\
 \\
 \text{total Cost} = 55.20 \times 1.15 \\
 = \$63.48
 \end{array}$$

CONCERT PROMOTER

Imagine that you are a concert promoter. You are responsible for promoting concerts for up-and-coming bands and selling tickets to these concerts. For your next concert, you have set a ticket price based on the amount it will cost you to put on the concert, plus a 30% profit.

Consider the following situations.

1. If ticket sales are high and you realize you are going to sell out quickly, what could you do?
2. If ticket sales are low and you realize you will not be able to sell them all, what could you do?
3. Under what circumstances might you consider selling tickets for a price that would not cover the cost of the concert?

SAMPLE SOLUTIONS

1. Raise the prices, see if you can add another show, limit the number of tickets per person.
2. Lower the prices, increase the promotions/ads, give tickets away as radio prizes.
3. There are not many circumstances, since your goal is to at least break even. However, in some dire circumstances, it may be better to make some money rather than no money.



The Dardanelles, a band from Newfoundland, play at Nova Scotia's Lunenburg Folk Harbour Festival.

DISCUSS THE IDEAS

SEASONS AND HOLIDAYS

The demand for many goods and services varies with the seasons and, as a result, so does the price of these goods and services. Consider summer and winter in different parts of the country. Can you name some goods or services that have higher prices in summer or winter?

Demand for many items also increases around holidays, which may cause an increase in the price. In small groups, discuss the following questions.

1. Consider the price of roses. What time of year are roses most expensive? Why?
2. Consider the price of a litre of gasoline. What time of year is gasoline most expensive? Why?
3. Name two or three other goods or services that have a higher price at certain times. Why do their prices fluctuate?
4. Name two or three products that command higher prices because they are rare or unique.
5. Find two examples where prices are advertised in a way that makes an item seem less expensive. Share your examples with your classmates.



In many cultures, flowers are a common gift for special occasions.

SAMPLE SOLUTIONS

1. Mother's Day (May), high school graduation (June), and weddings (summer) tend to be a high volume time. Students may think of other events that may cause a demand for roses (for example, Valentine's Day).
2. Summer: road trips tend to increase. In light of rising gasoline costs, encourage students to talk about trade and economic fluctuations.
3. The price of toys at Christmas: students will be able to suggest many examples.
4. Certain jewellery pieces, such as blue diamonds or real fresh-water pearls, expensive watches like Patek Philippe or Rolex, rare art works, first edition books, certain foods such as caviar.
5. Answers will vary, but students may notice that prices are often set just below a psychological turning point, such as \$39.95 instead of \$40.00. Other examples in which goods and services are advertised to seem less expensive than they are include plane fares that do not include taxes and fuel surcharges, one-way trips instead of round trips, hotel prices quoted by one night prices when a minimum stay is three nights. Sometimes manufacturers advertise an old price but have reduced the size of the package. Selling foods using the 100-gram price rather than the price per pound or kilogram also creates the impression that items are less expensive than they are.



HW: Page 32
Questions 1 - 8

[1.3 Build Your Skills Detailed Solutions.pdf](#)



1.3 Build Your Skills Detailed Solutions.pdf