

**Build Your New Skills**

1. a) Calculate the price of a package at half price by dividing by 2.

$$\frac{\$5.89}{2} = \$2.95, \text{ rounded off}$$

Calculate the cost of one package at full price and one package at half price.

$$\$5.89 + \$2.95 = \$8.84$$

b) First, calculate the total regular price.

$$2 \times \$5.89 = \$11.78$$

Then, calculate the difference between the regular cost and sale costs for the two packages.

$$\$11.78 - \$8.84 = \$2.94$$

Finally, calculate the percentage.

$$\frac{\$2.94}{\$11.78} = 0.249$$

This can be rounded to 25%.

This can also be done mentally: one package is 50% off so you are paying 75% of the total price on two packages.

2. a) At Rémy's store, the total price, including HST, can be found by adding 100% and 13%, converting to a decimal, and multiplying the price by 1.13.

$$\$49.95 \times 1.13 = \$56.44$$

At Alain's store, subtract the discount percent, 15%, from 100%, and convert to a decimal.

Then multiply the price by 0.85 to find the sale price.

$$\$55.95 \times 0.85 = \$47.56$$

Then, calculate the sale price plus HST.

$$\$47.56 \times 1.13 = \$53.74$$

b) Alain is right—with the sale, the racquet at his store is less expensive.

3. a) Calculate the cost of morning highlights. Convert 15% to a decimal and subtract that amount from the original price.

$$\$55.00 \times 0.15 = \$8.25$$

$$\$55.00 - \$8.25 = \$46.75$$

Calculate the cost of mid-afternoon highlights.

$$\$55.00 - \$5.00 = \$50.00$$

Morning appointments will get you the lowest price on highlighting.

b) Answers will vary but students should offer reasons for their answers. For example, the discount will appeal more because it allows you to save more money, or the coupon will appeal more because you know immediately how much you are saving without having to do any calculations. The time of day the person is available will also affect his or her choice.

4. First, calculate the roofer's savings with a 20% discount. Convert 20% to a decimal.

$$\$27.50 \times 0.20 = \$5.50$$

Calculate your cost of materials if he passes on 50% of his discount by dividing by 2.

$$\frac{\$5.50}{2} = \$2.75$$

Your discount on a square metre is \$2.75.

$$\$27.50 - \$2.75 = \$24.75$$

Your cost for a square metre would be \$24.75.

$$\$24.75/\text{m}^2 \times 74 \text{ m}^2 = \$1831.50$$

Calculate his hourly rate with a 5% discount. Convert 5% to a decimal.

$$\$36.00 \times 0.05 = \$1.80$$

Find the total savings on labour for 16 hours.

$$\$1.80 \times 16 = \$28.80$$

You would save \$28.80 on labour.

5. a) Calculate the total cost of 20 fans at each store.

The first wholesaler offers 5% off \$157.00.

Calculate the cost of one fan with the discount.

$$\$157.00 \times 0.95 = \$149.15$$

Then, calculate the cost with HST.

$$\$149.15 \times 1.15 = \$171.52$$

Find the cost of 20 fans.

$$\$171.52 \times 20 = \$3430.45$$

The second wholesaler charges \$149.00 each for orders of 10 or more. Find the cost of one fan, with HST.

$$\$149.00 \times 1.15 = \$171.35$$

Find the cost of twenty fans.

$$\$171.35 \times 20 = \$3427.00$$

b) The second wholesaler offers a better buy.

6. a) Calculate the percentage of markdown each item has been given.

Print:

$$\$31.99 - \$19.99 = \$12.00 \text{ discount}$$

$$\frac{\$12.00}{\$31.99} = 0.375$$

The discount is 38%, rounded to the nearest percent.

CD:

$$\$24.95 - \$21.99 = \$2.96 \text{ discount}$$

$$\frac{\$2.96}{\$24.95} = 0.12$$

The discount is 12%.

Bow drill replica:

$$\$49.99 - \$24.99 = \$25.00 \text{ discount}$$

$$\frac{\$25.00}{\$49.99} = 0.5$$

The discount is 50%.

b) Add up all the discounts.

$$\$12.00 + \$2.96 + \$25.00 = \$39.96 \text{ total savings}$$

Or you can calculate the total regular price.

$$\$31.99 + \$24.95 + \$49.99 = \$106.93$$

Calculate the total sale price.

$$\$19.99 + \$21.99 + \$24.99 = \$66.97$$

Find the total savings.

$$\$106.93 - \$66.97 = \$39.96$$

The most money is saved on the bow drill replica.

### **Extend Your Thinking**

7. a) HST is 15%.

Calculate the regular price.

$$\$26.00/h \times 55 h = \$1430.00$$

Add 15% to 100% of the total price to find 115%. Convert to a decimal and multiply.

$$\$1430.00 \times 1.15 = \$1644.50$$

Calculate the discount price by subtracting 5% from 100% of the total price to find 95%.

Convert to a decimal and multiply to find the discounted price.

$$\$26.00/h \times 0.95 = \$24.70/h$$

Find the total discounted price before tax.

$$\$24.70/h \times 55h = \$1358.50$$

Find the total price, including tax.

$$\$1358.50 \times 1.15 = \$1562.28$$

Calculate the savings.

$$\$1644.50 - \$1562.28 = \$82.22$$

Your total savings are \$82.22.

b) Similarly, calculate the second person's savings.

$$\$26.00 \times 60 \times 1.15 = \$1794.00 \text{ regular price}$$

$$\$24.70 \times 60 \times 1.15 = \$1704.30 \text{ discount price}$$

$$\$1794.00 - \$1704.30 = \$89.70$$

The total savings are \$89.70.

Then, calculate the difference in what you saved.

$$\$89.70 - \$82.22 = \$7.48$$

The owners of the second house save \$7.48 more than you do.