

6.3

Calculating Discounts & Increases

Try These

i) ~~.25%~~ \times \$800 = \$ 200

ii) 80% of \$1500 = \$ 1200

$$25\% = 0.25 \times 800$$

$$0.80 \times 1500$$

Hilda needs to make room for the summer line in her clothing store. She needs to calculate sale prices for her existing stock and set prices for her new arrivals.

- ① How much will she charge for an \$80 pair of jeans with a discount of 25%?

$$\text{Discount: } \$80 \times 0.25 = \$ 20$$

$$\text{Sale price: } \$ 80 - \$ 20 = \$ 60$$

Hilda needs to make room for the summer line in her clothing store. She needs to calculate sale prices for her existing stock and set prices for her new arrivals.

- ② Hilda bought a new line of jeans for \$42.50/pair. She will mark them up by 48%. What will she charge for the jeans?

$$\text{Mark up: } \$42.50 \times 0.48 = \$ 20.40$$

$$\text{Ticket price: } \$ 42.50 + \$ 20.40 = \$ 62.90$$

Hilda needs to make room for the summer line in her clothing store. She needs to calculate sale prices for her existing stock and set prices for her new arrivals.

- 3 What profit will Hilda make for each pair of jeans sold?

$$\begin{array}{r} \$62.90 \\ - \$42.50 \\ \hline \end{array}$$

Hilda will make \$ 20.40 in profit for each pair of jeans sold.

Example 1

Owen is offering a discount on an apartment of $\frac{1}{5}$ off the first month's rent of \$1200. What will the first month's rent be?

$$\frac{1}{5} = 0.2$$

Solution 1

Calculate the cost by first calculating the discount amount.

Discount: $\$1200 \times \frac{1}{5} = \$ \underline{240}$

First month's rent: $\$1200 - \$ \underline{240} = \$ \underline{960}$

Example 1

Owen is offering a discount on an apartment of $\frac{1}{5}$ off the first month's rent of \$1200. What will the first month's rent be?

Solution 2

Calculate the cost in one step.

$\frac{1}{5}$ (or 20%) off means $\frac{4}{5}$ (or 80%) of the original price.

First month's rent: $\$1200 \times \underline{0.80} = \$ \underline{960}$

Example 2

Ben bought a house for \$265 000. After one year, it increased in value by 4%. What was the value of Ben's house after one year?

Solution

$$\begin{aligned} \$265\,000 \times (1.00 + \underline{0.04}) &= \$265\,000 \times \underline{1.04} \\ &\quad \uparrow \\ &\quad 100\% + 4\% &= \$ \underline{275\,600} \end{aligned}$$

Example 3

Aida paid \$693 wholesale for mirrors that sell for \$990 retail. What discount was she given?

Solution

A. What percent of the original price is the sale price?

$$\frac{\text{sale price}}{\text{original price}} = \text{percent of original price}$$

$$\frac{693}{990} = 0.7, \text{ or } 70\%$$

B. What is the discount?

$$100\% - 70\% = 30\%$$