

Percent Applications: Discount, Markup, and Sales Tax

Vocabulary

Discount: the amount by which the regular price is reduced.

Markup: the amount above the price that the store paid for an item.

Sales Tax: a tax (fee) charged on the sale of an item or a service provided.

Wholesale Cost/Price: price the store paid for an item.

Retail Price / Selling Price: the amount the customer paid for an item.

Original Cost/Price: the amount the customer would pay without a discount.

To find a selling price with a markup

Method 1: find the amount of the markup; then add the markup to the wholesale cost.

Method 2: find total percent of what is being paid.

* for both methods, you may need to add sales tax to the total.

To find a selling price with a discount

Method 1: find the amount of the discount; then subtract the discount from the original cost.

Method 2: find the total percent of what is being paid.

* for both methods, you may need to add sales tax to the total.

To find an original price from a selling price must use a percent proportion.

Find the selling price given the cost and percent markup or discount.

1) Tina bought a tv that was discounted 33%. The regular price was \$599.00. She pays sales tax of 7.75%. How much does she pay for the tv?

Method 1

$$\begin{aligned}\text{Discount} &= \% \times \text{whole} \\ &= .33 \times 599 \\ &= 197.67\end{aligned}$$

$$\begin{array}{r}\text{selling price} \\ 599.00 \\ - 197.67 \\ \hline 401.33\end{array}$$

$$\begin{aligned}\text{Tax} &= \% \times \text{selling price} \\ &= .0775 \times 401.33 \\ &= 31.10\end{aligned}$$

$$\text{Cost} = 401.33 + 31.10 = 432.43$$

Find the selling price given the cost and percent markup or discount.

1) Tina bought a tv that was discounted 33%. The regular price was \$599.00. She pays sales tax of 7.75%. How much does she pay for the tv?

Method 2

$$\text{Discount price} = \overset{(100 - 33)}{\downarrow} .67 \times 599$$
$$= 401.33$$

$$\text{Cost} = 401.33 \times \overset{(100 + 7.75)}{\downarrow} 1.0775$$
$$= 432.43$$

Find the selling price given the cost and percent markup or discount.

2) A diamond ring has a wholesale price of \$89.99. It is marked up 325%. The sales tax rate is 5.5% at the store. What is the total cost of the ring?

Method 1

$$\begin{aligned}\text{Markup} &= \% \times \text{wholesale} \\ &= 3.25 \times 89.99 \\ &= 292.47\end{aligned}$$

$$\begin{array}{r} 89.99 \\ + 292.47 \\ \hline 382.46 \end{array}$$

↑
selling price

$$\begin{aligned}\text{Tax} &= 382.46 \times .055 \\ &= 21.04\end{aligned}$$

$$\text{Cost} = 382.46 + 21.04 = 403.50$$

Find the selling price given the cost and percent markup or discount.

2) A diamond ring has a wholesale price of \$89.99. It is marked up 325%. The sales tax rate is 5.5% at the store. What is the total cost of the ring?

Method 2

(100 + 325)

$$\begin{aligned}\text{Selling price} &= 89.99 \times 4.25 \\ &= 382.46\end{aligned}$$

$$\begin{aligned}\text{Cost} &= 382.46 \times 1.055 \quad (100 + 5.5) \\ &= 403.50\end{aligned}$$

Find the percent of change, then state as a markup or discount.

3) Price from \$145 to \$125.

4) Price from \$4.50 to \$8.00

$$\% \text{ of change} = \frac{\text{amt of change}}{\text{original}} \times 100$$

$$\frac{20}{145} \times 100$$

13.8% ↓
discount

$$\frac{3.50}{4.50} \times 100$$


77.8% ↑
markup

5) Find the original price if the sales price was \$64.50 and this was 25% off.

* must use proportion method

$$\frac{\text{Sales price}}{\text{original}} = \frac{\%}{100}$$

$$\frac{64.50}{x} = \frac{75}{100}$$

 (100-25)
you are paying 75%

$$75x = 6450$$

$$x = \$86$$