

Adi Bought A Bag For \$25 And Sold It At A Loss Of 10%. Find The Selling Price Of The Bag.

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Understanding how to calculate the selling price of an item when it is sold at a loss is a fundamental concept in business mathematics and financial literacy. Whether you're a student learning basic profit and loss calculations or a budding entrepreneur managing your inventory, mastering these calculations is essential. In this article, we will explore the step-by-step process to find the selling price of a bag that was bought at a certain price and sold at a specified loss percentage.

Introduction to Profit and Loss Calculations

Profit and loss calculations are core components of commerce and trade. They help determine the financial outcome of buying and selling goods.

- Profit occurs when the selling price exceeds the cost price.
- Loss occurs when the selling price is less than the cost price.

In our case, Adi purchased a bag at a cost price (CP) of \$25 and sold it at a loss of 10%. Our goal is to find the selling price (SP).

Understanding Loss Percentage

Loss percentage is the percentage of the cost price that is lost when selling an item at a loss. It is calculated as:

$$\left[\text{Loss Percentage} = \left(\frac{\text{Loss}}{\text{Cost Price}} \right) \times 100 \right]$$

In our problem:

- Loss percentage = 10%
- Cost price (CP) = \$25

Step-by-Step Calculation of the Selling Price

To find the selling price when a loss percentage is known, we can use the following formula:

$$\text{Selling Price} = \text{Cost Price} - \text{Loss}$$

But since the loss is expressed as a percentage, the calculation becomes:

$$\text{Loss} = \left(\frac{\text{Loss Percentage}}{100} \right) \times \text{Cost Price}$$

Therefore,

$$\text{Selling Price} = \text{Cost Price} - \left(\frac{\text{Loss Percentage}}{100} \right) \times \text{Cost Price}$$

which simplifies to:

$$\text{Selling Price} = \text{Cost Price} \times \left(1 - \frac{\text{Loss Percentage}}{100} \right)$$

Applying the values:

$$\text{Selling Price} = 25 \times \left(1 - \frac{10}{100} \right)$$

$$\text{Selling Price} = 25 \times (1 - 0.10)$$

$$\text{Selling Price} = 25 \times 0.90$$

$$\text{Selling Price} = 22.50$$

Hence, the selling price of the bag is \$22.50.

Understanding the Calculation in Context

Let's delve deeper into what this calculation signifies:

- Adi bought the bag for \$25.
- He sold it at a loss of 10%, which means he sold it for less than his original purchase price.
- The loss amount is 10% of \$25, which is \$2.50.

- Therefore, the selling price is \$25 minus the loss (\$2.50), which equals \$22.50.

This calculation shows that selling an item at a loss reduces the revenue compared to the purchase price. It's crucial for businesses and individuals to understand the implications of selling at a loss, especially if they aim to recover costs or minimize losses.

Practical Applications of Loss Calculations

The concept of calculating selling prices at a loss is applicable in various real-world scenarios:

1. Business and Retail

- Retailers often sell products at a loss during clearance sales to clear inventory.
- Understanding how to calculate these losses helps in planning sales strategies.

2. Inventory Management

- Knowing the loss percentage enables businesses to set appropriate prices to recover costs or minimize losses.

3. Personal Finance

- Individuals selling secondhand items need to calculate their effective profit or loss to evaluate their resale strategies.

Additional Examples and Practice Problems

To reinforce the concept, here are some practice problems:

- **Example 1:** An item is bought for \$50 and sold at a loss of 20%. Find the selling price.
- **Solution:** $SP = 50 \times (1 - 20/100) = 50 \times 0.80 = \$40.$

- **Example 2:** A laptop purchased for \$800 is sold at a loss of 15%. What is the selling price?
- **Solution:** $SP = 800 \times (1 - 15/100) = 800 \times 0.85 = \$680.$

Important Tips for Calculations

- Always convert percentage loss to decimal form before multiplying.
- Remember that selling at a loss results in a selling price less than the cost price.
- Use the formula:

$$\text{Selling Price} = \text{Cost Price} \times \left(1 - \frac{\text{Loss Percentage}}{100} \right)$$

- For profit calculations, replace loss with profit and add to the cost price.

Conclusion

In summary, calculating the selling price when selling at a loss involves understanding the relationship between cost price, loss percentage, and selling price. For Adi, who bought a bag for \$25 and sold it at a 10% loss, the selling price is \$22.50. Mastering these calculations is essential for effective financial planning, inventory management, and making informed business decisions.

By practicing these concepts regularly, you can confidently determine selling prices for various profit and loss scenarios, ensuring better financial outcomes whether in personal transactions or business operations.

Frequently Asked Questions

What was the original purchase price of the bag that Adi bought?

The original purchase price was \$25.

If Adi sold the bag at a 10% loss, how much did he lose in dollars?

He lost \$2.50, which is 10% of \$25.

How do you calculate the selling price when there's a loss percentage involved?

Subtract the loss amount from the cost price, or multiply the cost price by (100% - loss%) to find the selling price.

What is the formula to find the selling price when a loss percentage is given?

$\text{Selling Price} = \text{Cost Price} \times (1 - \text{Loss Percentage}/100).$

Calculate the selling price of the bag after a 10% loss on a \$25 purchase.

$\text{Selling Price} = \$25 \times (1 - 10/100) = \$25 \times 0.9 = \$22.50.$

Is selling at a loss always a bad idea? Why or why not?

Not necessarily; sometimes selling at a loss is strategic, such as clearing inventory or avoiding higher storage costs.

What is the final selling price of Adi's bag after a 10% loss?

The selling price is \$22.50.

Additional Resources

Understanding the Selling Price After a Loss: A Detailed Breakdown of Adi's Bag Transaction

When it comes to retail and personal sales, understanding how to calculate the selling price after a loss or profit is essential. Whether you're a budding entrepreneur, a seasoned business owner, or simply someone interested in financial literacy, mastering these calculations can help you make informed decisions and better manage your inventory or personal sales.

Today, we will explore a specific scenario involving Adi, who bought a bag for a certain price and later sold it at a loss. By analyzing this example thoroughly, you'll gain insights into the fundamental concepts of percentage loss, cost price, selling price, and how they interrelate.

Introduction: The Scenario at a Glance

Imagine Adi, an individual who purchased a stylish bag for \$25. Later, Adi decided to sell the bag but at a loss of 10%. Our goal is to determine the selling price of the bag in this transaction.

This scenario is a classic example often encountered in retail mathematics and financial calculations. It exemplifies how a percentage loss impacts the final selling price relative to the original cost.

Key Terms and Concepts

Before diving into calculations, it's important to understand the core terminology involved:

1. Cost Price (CP)

- The original amount paid to acquire the item.
- In this case, \$25.

2. Selling Price (SP)

- The amount received upon selling the item.
- Our objective: calculate SP.

3. Percentage Loss

- The percentage by which the selling price is less than the cost price.
- In this scenario, 10% loss.

4. Profit and Loss Calculations

- Profit occurs when $SP > CP$.
 - Loss occurs when $SP < CP$.
 - The percentage loss relates to how much less the SP is compared to the CP, expressed as a percentage of the CP.
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Understanding the Relationship Between Cost Price, Selling Price, and Loss

The fundamental formula connecting these variables is:

$$\text{Loss} = \text{Cost Price} - \text{Selling Price}$$

When expressed in percentage form:

$$\text{Percentage Loss} = \left(\frac{\text{Loss}}{\text{Cost Price}} \right) \times 100$$

Rearranged, to find the Selling Price when the Cost Price and Percentage Loss are known:

$$\text{Selling Price} = \text{Cost Price} - \left(\frac{\text{Percentage Loss}}{100} \times \text{Cost Price} \right)$$

or

$$\text{Selling Price} = \text{Cost Price} \times \left(1 - \frac{\text{Percentage Loss}}{100} \right)$$

This formula is crucial because it simplifies the calculation of the SP given the loss percentage.

Step-by-Step Calculation of the Selling Price

Let's apply this formula to Adi's situation:

Step 1: List known values

- Cost Price (CP): \$25
- Loss Percentage: 10%

Step 2: Convert percentage loss to decimal

$$\left[\frac{10}{100} = 0.10 \right]$$

Step 3: Calculate the amount of loss in dollar terms

$$\left[\text{Loss} = 0.10 \times 25 = \$2.50 \right]$$

Step 4: Compute the Selling Price

$$\left[SP = CP - \text{Loss} = 25 - 2.50 = \$22.50 \right]$$

Result: The selling price of the bag is \$22.50.

Alternative Approach: Using the Percentage Formula Directly

Instead of calculating loss amount first, you can directly use the percentage formula:

$$\left[SP = CP \times \left(1 - \frac{\text{Loss \%}}{100} \right) \right]$$

Substituting the known values:

$$\left[SP = 25 \times (1 - 0.10) = 25 \times 0.90 = \$22.50 \right]$$

Both methods lead to the same result, confirming the reliability of the calculation.

Interpreting the Result

Adi's sale at \$22.50 indicates a loss of \$2.50, which aligns with the 10% loss percentage. This scenario highlights a common situation where items are sold below their purchase price, often due to market conditions, clearance sales, or strategic pricing.

Important points to note:

- Selling below cost price results in a loss, which is common in retail for clearing inventory.
- Percentage loss affects the final profit or loss margin, and understanding it helps in strategic pricing.
- Calculating selling price based on loss percentage helps in planning for desired profit margins or acceptable losses.

Real-World Applications and Implications

While this example involves a small retail item, the principles extend to various fields such as:

- Business sales and inventory management: Determining how much to sell an item for to recover costs or minimize losses.
- Personal sales: Calculating how much less you need to sell an item for to avoid losing money.
- Financial planning: Understanding how percentage losses impact overall profit margins.

Practical Tips:

- Always identify your cost price before setting a selling price.
- Decide beforehand whether a loss is acceptable based on strategic goals.
- Use the percentage formula to quickly estimate the selling price for any desired profit or loss percentage.

Summary and Final Thoughts

In this detailed analysis, we have:

- Explored the scenario where Adi bought a bag for \$25 and sold it at a 10% loss.
- Learned how to calculate the selling price using fundamental percentage formulas.

- Recognized the importance of understanding profit and loss calculations in everyday transactions.

Final Answer:

Adi sold the bag for \$22.50, incurring a 10% loss on his original purchase price.

This example underscores the importance of mastering basic percentage calculations, which have broad applications in personal finance, retail, and business operations. Whether you're handling inventory, setting prices, or evaluating investment outcomes, these principles form the backbone of sound financial decision-making.

Remember: Always consider the broader context of your sales or purchases, and plan your pricing strategies accordingly to optimize your financial outcomes.

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