A Watch Is Sold For $130 At A Loss Of $30. What Was The Original Cost Of The Watch

Understanding the Problem: Selling Price and Loss

Introduction to the Scenario

When analyzing financial transactions involving the sale of goods, it’s crucial to understand the relationship between the sale price, cost price, and profit or loss incurred. The problem at hand states: **A watch is sold for $130 at a loss of $30. What was the original cost of the watch?** This scenario provides two key pieces of information: the selling price and the loss amount. Our goal is to determine the original cost, also known as the cost price, of the watch.

Breaking Down the Components

Let's clarify the definitions:

- **Selling Price (SP):** The amount received from selling the item, which is $130 in this case.
- **Loss:** The difference between the cost price and the selling price when the selling price is less than the cost price. Here, the loss is $30.
- **Cost Price (CP):** The original price paid for the watch, which we are trying to find.

Mathematical Relationship Between Cost Price, Selling Price, and Loss

Key Formula

The fundamental relation in such transactions is:

```
Loss = Cost Price - Selling Price
```

Rearranged to find the cost price:

```
Cost Price = Selling Price + Loss
```

Applying the Formula

Given the values:

- Selling Price (SP) = $130
- Loss = $30

Substitute into the formula:

```
Cost Price = $130 + $30 = $160
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Therefore, the original cost of the watch was $160.

Detailed Explanation of the Calculation

Understanding Why the Cost Price Is Higher Than the Selling Price

Since the watch was sold at a loss, the seller received less money than it cost to acquire the watch. The loss of $30 indicates that:

- The seller’s original investment (cost price) was $160.
- The seller sold the watch for $130, which is $30 less than the cost price.

Step-by-Step Breakdown

1. Identify the selling price: $130.
2. Recognize the loss amount: $30.
3. Recall the relationship: Cost Price = Selling Price + Loss.
4. Calculate: $130 + $30 = $160.

Additional Insights and Real-World Applications

Importance of Understanding Cost and Selling Price

Knowing the original cost price is essential for businesses to determine profitability and make informed pricing decisions. If a seller knows they incurred a loss, they can strategize to avoid similar losses in future transactions or adjust their pricing accordingly.

Implications for Sellers and Buyers

- **Sellers:** Understanding the relationship helps in setting appropriate selling prices to ensure profitability.
- **Buyers:** Recognizing that a lower selling price might indicate a loss for the seller could influence negotiations or perceptions of value.

Alternative Scenarios and Related Problems

What if the Sale Had Been at a Profit?

If instead of a loss, the watch had been sold at a profit, the calculations would be similar but with profit instead of loss. For example:

- Profit = Selling Price - Cost Price
- Rearranged: Cost Price = Selling Price - Profit

Example Problem

If a watch was sold for $130 at a profit of $30, what was the original cost?

- Solution: Cost Price = $130 - $30 = $100

Summary and Final Thoughts

In conclusion, the key to solving for the original cost of an item sold at a loss involves understanding the basic relationship between selling price, cost price, and loss. By applying the formula:

```
Cost Price = Selling Price + Loss
```

and substituting the given values, we find that the original cost of the watch was $160. This straightforward calculation underscores the importance of fundamental algebraic relationships in solving real-world financial problems.

Final Note

Whether analyzing sales data or making purchasing decisions, grasping the concepts of profit and loss is vital for effective financial management. Remember, always identify the key variables—selling price, cost price, profit, and loss—and use the appropriate relationships to derive unknown values with confidence.

Frequently Asked Questions

How do you find the original cost of a watch sold at a loss?

To find the original cost, add the loss amount to the selling price. In this case, $130 + $30 = $160, so the original cost was $160.

What is the formula to calculate the original cost when a product is sold at a loss?

Original Cost = Selling Price + Loss Amount.

If a watch is sold for $130 at a loss of $30, what percentage loss does that represent?

Loss percentage = (Loss / Original Cost) × 100 = ($30 / $160) × 100 ≈ 18.75%.

Can you verify the original cost of a watch sold at $130 with a $30 loss?

Yes. Original Cost = Selling Price + Loss = $130 + $30 = $160, confirming the original cost was $160.

Why is it important to determine the original cost of an item sold at a loss?

Knowing the original cost helps in calculating profit or loss percentages, assessing profitability, and making informed pricing decisions.

What would be the profit or loss if the watch was sold for $130, but the original cost was $200?

The loss would be $200 - $130 = $70, indicating a loss of $70.

How does understanding loss and selling price help in business management?

It helps in setting appropriate prices, managing profit margins, and making strategic decisions to maintain profitability.

Additional Resources

A Watch Is Sold For $130 At a Loss Of $30. What Was The Original Cost Of The Watch? — This is a classic problem in basic business mathematics and profit-loss calculations that often appears in financial quizzes, retail scenarios, or introductory accounting courses. Understanding how to determine the original cost of an item based on its selling price and the profit or loss involved is essential for anyone managing sales, inventory, or personal budgeting. In this guide, we will explore this problem step-by-step, breaking down the concepts involved and providing a clear, comprehensive method to find the original cost of the watch.

Introduction to Profit and Loss Concepts

Before delving into the specific problem, it's important to understand the fundamental concepts of profit and loss in sales transactions.

What Is Profit?

Profit occurs when an item is sold for more than its original cost. It is calculated as:

Profit = Selling Price - Cost Price

What Is Loss?

Loss happens when an item is sold for less than its original cost, calculated as:

Loss = Cost Price - Selling Price

Important Terms in Profit-Loss Calculations

- Cost Price (CP): The original price at which the item was purchased or produced.
- Selling Price (SP): The price at which the item is sold.
- Profit: The gain made from selling the item, if SP > CP.
- Loss: The amount lost when SP < CP.

Breaking Down the Problem

Given:

- Selling Price (SP) = $130
- Loss = $30

Question:

What was the original cost of the watch?

In this scenario, the sale resulted in a loss of $30, meaning the original cost was higher than the selling price by $30.

Step-by-Step Solution

To find the original cost, we need to analyze the relationship between the cost price and the selling price, considering the loss.

Step 1: Express the Loss in Terms of Cost Price and Selling Price

Given the loss:

Loss = Cost Price - Selling Price

Rearranged to find the Cost Price:

Cost Price = Selling Price + Loss

Step 2: Substitute the Known Values

From the problem:

- Selling Price = $130
- Loss = $30

Therefore:

Cost Price = $130 + $30 = $160

Final Answer

The original cost of the watch was $160.

Additional Insights and Variations

Understanding this problem allows us to handle variations and similar questions with ease. Here are some scenarios and how to approach them:

Scenario 1: Selling at a Profit

Suppose the watch was sold at a profit of $30 instead of a loss, with the same selling price.

- Profit = $30
- Selling Price = $130

Then:

Cost Price = Selling Price - Profit = $130 - $30 = $100

Scenario 2: Selling Price is Different

If the selling price was $150 at a loss of $30:

- Loss = $30
- Selling Price = $150

Then:

Cost Price = $150 + $30 = $180

Scenario 3: Percentage Approach

Sometimes, profit or loss is given as a percentage. For example, if a watch was sold for $130 at a 15% loss, you can calculate the original cost as:

Loss Percentage = (Loss / Cost Price) × 100

Rearranged to find the cost:

Cost Price = Selling Price / (1 - Loss Percentage / 100)

Common Mistakes to Avoid

While solving profit-loss problems, be cautious of these common errors:

- Confusing profit with loss; always verify whether the selling price is above or below the

cost price.
- Forgetting to add or subtract the loss/profit correctly based on the scenario.
- Mixing up formulas; remember:

- Profit: SP > CP
- Loss: SP < CP

Summary

In summary, when a watch is sold for $130 at a loss of $30, the key steps to find the original cost are:

1. Recognize that Loss = Cost Price - Selling Price
2. Rearrange the formula: Cost Price = Selling Price + Loss
3. Substitute the known values: $130 + $30 = $160

Thus, the original cost of the watch was $160.

Final Thoughts

Mastering profit and loss calculations is vital for anyone involved in sales, retail, or personal finance management. By understanding the fundamental relationships and practicing with different scenarios, you can quickly determine original costs, profit margins, or loss amounts. This problem serves as a straightforward example of these principles, and with the approach outlined above, you'll be well-equipped to tackle similar questions confidently.

Remember: Always verify whether you're dealing with profit or loss, and apply the appropriate formula accordingly. The clarity in understanding these concepts will make financial analysis much more manageable and accurate.

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