

At A Sale This Week, A Desk Is Being Sold For \$285.60. This Is 34% Of The Original Price.What Is The

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Understanding the Problem

In the world of sales and discounts, understanding how to determine the original price of an item based on its discounted price and percentage off is a fundamental skill. In this scenario, a desk is on sale at \$285.60, which represents 34% of its original price. The primary goal is to find out what the original price of the desk was before any discounts were applied.

This problem involves reverse-engineering the original price from the sale price and the percentage discount. To solve this, it's essential to understand the relationship between the sale price, original price, and discount percentage.

Key Concepts and Formulas

1. Percentage of Original Price

- The sale price is a certain percentage of the original price.
- Expressed mathematically:

$$\text{Sale Price} = \left(\frac{\text{Discount Percentage}}{100} \right) \times \text{Original Price}$$

- Or, more simply:

$$\text{Sale Price} = \text{Original Price} \times \text{Percentage (as a decimal)}$$

2. Finding the Original Price

- Rearrange the formula to solve for the original price:

$$\text{Original Price} = \frac{\text{Sale Price}}{\text{Percentage (as a decimal)}}$$

- In this case, since the sale price is \$285.60 and the percentage of the original price that the sale price represents is 34% (or 0.34), the calculation becomes straightforward.

Step-by-Step Solution

1. Identify the Known Values

- Sale Price (SP) = \$285.60
- Sale Percentage of Original Price (P) = 34% = 0.34

2. Apply the Formula

- Use the formula:

$$\text{Original Price} = \frac{\text{Sale Price}}{\text{Percentage}}$$

- Substitute the known values:

$$\text{Original Price} = \frac{285.60}{0.34}$$

3. Perform the Calculation

- Calculating:

$$\text{Original Price} = \frac{285.60}{0.34} \approx 840$$

- Therefore, the original price of the desk was approximately \$840.

Additional Considerations and Checks

1. Confirm the Calculation

- To verify the result, multiply the original price by the percentage:

$$\begin{aligned} & \backslash[\\ & 840 \times 0.34 = 285.60 \\ & \backslash] \end{aligned}$$

- Since this matches the sale price, the calculation is correct.

2. Rounding and Precision

- In some cases, the division may produce more decimal places.
- Always round to two decimal places for currency.
- If the calculation yields \$840 exactly, no further rounding is necessary.

Understanding the Context of Discounts

1. How Discounts Work

- Discounts reduce the original price by a certain percentage.
- The sale price is the original price minus the discount amount.

2. Calculating Discount Amount

- Discount amount = Original Price $\times$ Discount Percentage
- For this example:

$$\begin{aligned} & \backslash[\\ & 840 \times 0.34 = 285.60 \\ & \backslash] \end{aligned}$$

- The discount amount is \$285.60, which confirms the sale price.

3. Calculating the Discount Percentage if the Original Price is Known

- If the original price was known, and the sale price was \$285.60, the discount percentage could be found using:

$$\begin{aligned} & \backslash[\\ & \text{Discount Percentage} = \frac{\text{Discount Amount}}{\text{Original Price}} \times 100 \\ & \backslash] \end{aligned}$$

Practical Applications and Examples

Example 1: Different Sale Prices

- Suppose a different desk is on sale at \$200, and this represents 25% off.
- Find the original price:
$$\text{Original Price} = \frac{200}{0.25} = 800$$
- The original price was \$800 before a 25% discount.

Example 2: Calculating Final Price After Discount

- If an item's original price is known, and a discount percentage is given, find the final sale price.
- For example, a chair costs \$150 originally, with a 20% discount:
Discount amount = $(150 \times 0.20 = 30)$
- Sale price = $(150 - 30 = 120)$

Summary of Key Takeaways

- The original price can be calculated by dividing the sale price by the percentage (expressed as a decimal).
- In this problem, the original price of the desk was approximately \$840.
- Understanding the relationship between discount, sale price, and original price is crucial for financial literacy.
- Always verify your calculations by reverse-checking with the known percentages or amounts.

Conclusion

Determining the original price of an item based on its sale price and percentage discount is a common mathematical problem that combines understanding percentages, algebra, and practical application. In the case of the desk being sold for \$285.60, which is 34% of its original price, the calculation reveals that the original price was approximately \$840. This

knowledge not only helps consumers make informed purchasing decisions but also enhances understanding of how discounts work in retail settings. Whether you're a shopper trying to evaluate deals or a student learning about percentages, mastering these calculations is an essential skill in everyday financial literacy.

Frequently Asked Questions

What was the original price of the desk before the sale?

The original price of the desk was \$420.00.

How do you calculate the original price if the sale price and discount percentage are known?

You divide the sale price by (1 minus the discount percentage in decimal form). For example, $\$285.60 \div (1 - 0.34) = \420.00 .

If the sale price is \$285.60 and is 34% off, what is the amount of the discount?

The discount amount is 34% of the original price, which is $\$420.00 \times 0.34 = \142.80 .

What is the sale percentage if the sale price is \$285.60 and the original price was \$420.00?

The sale percentage is 34%, since the sale price is 66% of the original price ($\$285.60 \div \420.00).

How would you verify the correctness of the original price calculation?

Multiply the sale price by the reciprocal of 66% (which is approximately 1.5152). So, $\$285.60 \times 1.5152 \approx \420.00 , confirming the original price.

If the discount percentage increases to 40%, what would be the new sale price for a \$420.00 desk?

The new sale price would be $\$420.00 \times (1 - 0.40) = \252.00 .

Additional Resources

At A Sale This Week, A Desk Is Being Sold For \$285.60. This Is 34% Of The Original Price. What Is The

In today's competitive retail environment, sales and discounts are key drivers behind consumer purchasing decisions. The scenario where a desk is being sold for \$285.60, representing 34% of its original price, offers an excellent opportunity to explore the intricacies of discounts, pricing strategies, and how consumers can make informed decisions. This article provides a detailed review and analysis of this specific sale, shedding light on how the discounted price relates to the original price, the implications for buyers, and the broader context of sales in retail.

Understanding the Discount: The Basics

Before diving into the specifics of the desk sale, it's essential to understand the fundamental concepts of discounts and pricing. When a product is marked with a discounted price, it typically reflects a percentage reduction from its original or retail price. In this case, the desk's sale price is \$285.60, which is 34% of its original cost.

Key concepts to consider:

- Original Price (List Price): The initial price set by the retailer before any discounts.
- Discount Percentage: The proportion of the original price reduced during the sale.
- Sale Price: The final amount the customer pays during the sale period.

Calculating the Original Price

The critical question is: What was the original price of the desk? Since the sale price is given as 34% of the original, we can set up a simple calculation to find the original price.

Calculation:

Original Price = Sale Price / (Discount Percentage)

Given:

Sale Price = \$285.60

Discount Percentage = 34% = 0.34

Plugging into the formula:

Original Price = $\$285.60 / 0.34 \approx \840.00

Result:

The original price of the desk was approximately \$840.00 before the discount.

This calculation is straightforward but emphasizes the importance of understanding percentage-based discounts in retail. Knowing the original price helps consumers evaluate whether the sale truly offers a good deal.

Implications of the Discount for Consumers

Understanding that the desk was originally priced at around \$840.00 and is now available for \$285.60 reveals a significant discount. This 66% reduction (since $\$840 - \$285.60 = \$554.40$, which is 66% of the original price) makes it an attractive offer, but consumers should consider several factors before making a purchase.

Pros of the Discounted Desk

- Substantial Savings: The discount represents more than half off the original price, providing excellent value for a quality desk.
- Potential for Quality: Higher original prices often correlate with better materials or craftsmanship, so the discounted item might be a premium product at a reduced rate.
- Opportunity for Upgrading: Consumers can afford a better desk than they initially could, thanks to the significant discount.

Cons or Cautions

- Assessing Quality: Sometimes, heavily discounted items are last season's models or have minor defects. It's essential to verify the product's condition.
- Comparison Shopping: Consumers should compare similar desks in the market to ensure this deal is truly competitive.
- Understanding the Need: A discount shouldn't lead to impulsive buying; buyers should evaluate if they genuinely need the desk or if it fits their space and style.

Features and Considerations of the Desk

While the specific features of the desk are not detailed in the initial scenario, typical considerations include:

- Material: Wood, metal, glass, or composite materials influence durability and aesthetics.
- Size and Dimensions: Ensuring the desk fits in the intended space is vital.
- Design and Style: Modern, traditional, minimalist, or ergonomic designs cater to different tastes and needs.
- Features: Built-in storage, adjustable height, cable management, and other functionalities enhance usability.
- Brand and Warranty: Reputable brands often offer better quality and customer support, which can be a decisive factor.

Pros:

- Features that suit various work or study environments.
- Potential for customization or additional accessories.

Cons:

- Additional costs for delivery, assembly, or accessories.
- Compatibility with existing decor or furniture.

Evaluating the Sale in the Broader Context

Understanding this sale within the wider retail landscape helps consumers appreciate its significance.

Seasonal Sales and Promotions

Many retailers schedule large sales around holiday periods, back-to-school seasons, or end-of-season clearances, which often include significant discounts like this. Recognizing the timing can help buyers determine if the deal is truly exceptional or part of routine promotions.

Retail Strategies Behind Heavy Discounts

Businesses may discount high-value items to clear inventory, attract foot traffic, or promote brand awareness. Sometimes, a deep discount can be a marketing tactic to entice buyers into the store, with the hope they'll purchase additional items.

The Importance of Price Comparison

Before committing, consumers should compare this deal with online marketplaces, other local stores, or even second-hand options. Sometimes, similar desks might be available at comparable or lower prices elsewhere, especially when factoring in shipping or assembly costs.

Tips for Making the Most of the Sale

To maximize benefits from this deal, consumers should consider the following:

- Verify the Product: Confirm the desk's condition, warranty, and return policy.
- Assess Needs: Ensure the desk's size, style, and features align with your requirements.
- Check for Additional Costs: Delivery, assembly, or accessory costs can affect the overall value.
- Negotiate if Possible: Sometimes, in-store discounts can be further negotiated, especially for high-value items.
- Plan for Future Use: Think about the durability and whether the desk will serve long-term needs.

Conclusion

The sale price of \$285.60 for a desk originally costing approximately \$840.00 represents an exceptional discount, making it a compelling opportunity for consumers seeking quality furniture at a reduced cost. Understanding the mathematics behind the discount, evaluating the features and quality of the product, and considering the broader retail context ensures buyers make informed decisions. While such significant markdowns are attractive, due diligence remains essential to ensure the purchase aligns with personal needs, budget, and expectations. Overall, this sale exemplifies how strategic discounts can benefit both retailers and consumers, fostering smart shopping in a competitive marketplace.

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