

A Computer Costs 968. A Tax Of 16.5% Is Then Added To The Cost Of The Computer. Work Out The Amount Of

Understanding the Total Cost of a Computer After Tax Addition

A computer costs 968. A tax of 16.5% is then added to the cost of the computer. Work out the amount of the tax and the total amount payable. This problem involves basic percentage calculations, which are essential in understanding how taxes influence the final price of products. Whether you're a student learning about percentages or a shopper trying to budget, grasping how to calculate taxes and total costs is incredibly useful.

Breaking Down the Problem

Key Information

- Initial price of the computer: 968
- Tax rate: 16.5%

What Needs to Be Calculated

1. The amount of tax added to the original price.
2. The total cost of the computer after including the tax.

Calculating the Tax Amount

Step 1: Convert the Percentage to a Decimal

To calculate the tax amount, first convert 16.5% to a decimal:

$$16.5\% = \frac{16.5}{100} = 0.165$$

Step 2: Multiply the Original Price by the Decimal

Next, multiply the original price by the decimal to find the tax amount:

$$\text{Tax} = 968 \times 0.165$$

Step 3: Perform the Calculation

Calculating:

$$968 \times 0.165 = 159.72$$

Therefore, the tax amount added to the computer's price is 159.72.

Calculating the Total Cost

Step 1: Add the Tax to the Original Price

Total cost is:

$$\begin{aligned} \text{Total Cost} &= \text{Original Price} + \text{Tax} \\ &= 968 + 159.72 = 1127.72 \end{aligned}$$

Final Answer

- Tax amount: 159.72
- Total cost of the computer after tax: 1127.72

Additional Tips for Calculating Prices with Tax

1. Always Convert Percentage to Decimal First

This step simplifies multiplication and avoids errors.

2. Check Your Calculations

Use a calculator to ensure accuracy, especially with decimals.

3. Understand the Difference Between Gross and Net Price

- Net Price: The original cost of the item (968 in this case).
- Gross Price: The total amount paid after adding tax (1127.72 here).

Practical Applications of Percentage Calculations

Shopping and Budgeting

Knowing how to calculate taxes helps in estimating the final price of items before purchase, enabling better budget planning.

Business and Accounting

Businesses regularly calculate taxes to determine the final sale price and profit margins.

Financial Literacy

Understanding percentages and taxes is fundamental to personal finance, helping consumers make informed decisions.

Summary of the Calculation Process

1. Convert the tax percentage to a decimal: $16.5\% = 0.165$
2. Calculate the tax amount: $968 \times 0.165 = 159.72$
3. Add the tax to the original price: $968 + 159.72 = 1127.72$

Final Thoughts

Calculating the total cost of a product after tax is a fundamental skill that applies across various scenarios. By understanding how to convert percentages to decimals and perform straightforward multiplication, you can quickly determine the final price of any item, ensuring better financial planning. Remember to always double-check your calculations and consider the impact of taxes when making purchases or financial decisions.

FAQs About Calculating Price Including Tax

Q1: If the computer's original price changes, how does that affect the tax and total cost?

The calculations scale proportionally. Simply multiply the new price by 0.165 to find the new tax amount, then add it to the original price for the total cost.

Q2: How can I quickly estimate the total cost without precise calculations?

Round the tax percentage to 16.5% $\approx$ 17% for quick estimates. Multiply the original price by 0.17 and add the result to the original price for an approximate total.

Q3: Does the method change if the tax rate is different?

No, the same process applies: convert the percentage to a decimal and multiply by the original price to find the tax.

Conclusion

Understanding how to calculate the tax amount and total cost of items like computers is an essential financial skill. By following straightforward steps—converting percentages to decimals, multiplying, and summing—you can confidently determine final prices in various purchasing scenarios. Mastering this basic percentage calculation paves the way for improved financial literacy and smarter shopping decisions.

Frequently Asked Questions

What is the total cost of the computer after adding a 16.5% tax to its original price of \$968?

First, calculate the tax amount: 16.5% of $\$968 = 0.165 \times 968 = \159.72 . Then, add this to the original price: $\$968 + \$159.72 = \$1127.72$. So, the total cost after tax is $\$1127.72$.

How do you calculate the total price of a computer costing \$968 with a 16.5% tax?

Multiply the original price by 1 plus the tax rate in decimal form: $968 \times (1 + 0.165) = 968 \times 1.165 = \1127.72 . This gives the total price including tax.

What is the amount of tax added to a \$968 computer at 16.5%?

The tax amount is 16.5% of $\$968$, which is $\$159.72$.

If the tax rate is increased to 20%, what would be the new total cost of the computer?

Calculate the new total: $968 \times (1 + 0.20) = 968 \times 1.20 = \1161.60 .

How much is the tax component in the total price of \$1127.72 for the computer?

Tax component = Total price - Original price = $\$1127.72 - \$968 = \$159.72$.

What formula can be used to find the total price after adding a percentage tax?

Total price = Original price $\times (1 + \text{Tax rate in decimal})$. For example, Total price = 968×1.165 .

If the total amount paid for the computer is \$1127.72, what was the original cost before tax?

The original cost is the total amount divided by 1 plus the tax rate: $1127.72 \div 1.165 \approx \968 .

How do you verify the total price after adding 16.5%

tax to the original cost?

Calculate the tax amount (\$159.72), then add it to the original cost (\$968):
 $\$968 + \$159.72 = \$1127.72$, confirming the total.

What is the percentage increase in the total price due to the 16.5% tax?

The total price increases by 16.5%, which is the tax rate applied to the original cost.

Additional Resources

Understanding the Cost of a Computer Including Tax: A Comprehensive Breakdown

When evaluating the true expense of purchasing a computer, it's essential to account not only for its listed price but also for any additional costs such as taxes. In this detailed review, we will explore the process of calculating the total cost of a computer priced at 968 units (currency unspecified), factoring in a tax rate of 16.5%. We will break down each step, discuss the underlying principles, and provide insights into related concepts such as percentage calculations, tax implications, and financial literacy.

Introduction to Basic Concepts: Price, Tax, and Total Cost

Before diving into calculations, it's vital to establish a clear understanding of the core concepts involved:

- **Base Price:** The initial cost of an item before any additional charges, in this case, 968.
- **Tax Rate:** The percentage added to the base price based on government or retailer policies, here 16.5%.
- **Tax Amount:** The actual monetary value of the tax, calculated by applying the tax rate to the base price.
- **Total Cost:** The sum of the base price and the tax amount, representing what a customer ultimately pays.

Understanding these components enables consumers and businesses to make informed financial decisions, compare prices accurately, and plan budgets effectively.

Step-by-Step Calculation Process

Let's walk through the precise calculations necessary to determine the total amount payable for the computer, which includes the tax.

1. Identifying the Given Data

- Cost of the computer (Base Price): 968
- Tax Rate: 16.5%

2. Converting the Tax Rate to Decimal Form

To perform calculations, percentage rates are converted into decimal form:

$$\text{Tax Rate (decimal)} = \frac{16.5}{100} = 0.165$$

3. Calculating the Tax Amount

Multiply the base price by the tax rate:

$$\text{Tax Amount} = \text{Base Price} \times \text{Tax Rate}$$

$$\text{Tax Amount} = 968 \times 0.165$$

To perform this multiplication accurately, break it down into simpler steps:

- Multiply 968 by 0.1 (10%): $968 \times 0.1 = 96.8$
- Multiply 968 by 0.06 (6%): $968 \times 0.06 = 58.08$
- Multiply 968 by 0.005 (0.5%): $968 \times 0.005 = 4.84$

Now, sum these to get the total tax:

$$96.8 + 58.08 + 4.84 = 159.72$$

Alternatively, for a more straightforward approach, use a calculator or long multiplication:

```
\[
968 \times 0.165 = 159.72
\]
```

Result: The tax amount is 159.72.

4. Calculating the Total Cost

Add the tax amount to the base price:

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\[
\text{Total Cost} = \text{Base Price} + \text{Tax Amount}
\]
```

```
\[
\text{Total Cost} = 968 + 159.72 = 1127.72
\]
```

Final Answer: The total amount payable for the computer, including tax, is 1127.72.

Implications of the Calculation

Understanding how taxes affect purchase price has several practical implications:

- Budget Planning: Knowing the total cost helps consumers allocate sufficient funds.
- Price Comparison: Comparing base prices without taxes can be misleading; total costs provide a clearer picture.
- Business Pricing Strategies: Retailers might display prices excluding taxes to appear more competitive, but customers should always consider the final amount payable.

Deeper Insights into Percentage Calculations

Calculating taxes involves understanding percentages and their conversions:

- Percentage to Decimal: Dividing the percentage by 100 converts it into a decimal suitable for multiplication.
- Applying Percentage: Multiplying the base price by the decimal gives the

exact amount of tax.

Example:

If the price of an item is P and the tax rate is $R\%$, then:

$$\text{Tax} = P \times \frac{R}{100}$$

This fundamental formula applies universally for calculating taxes, discounts, markups, and other percentage-based adjustments.

Additional Considerations and Variations

While the example uses a specific tax rate and price, real-world scenarios often involve various complexities:

1. Different Tax Rates

- Some regions or products may have different tax rates (e.g., VAT, sales tax).
- Calculations adapt by substituting the relevant rate.

2. Multiple Tax Components

- Certain purchases might include multiple taxes (e.g., state, local, environmental).
- Total tax is the sum of individual taxes, each calculated separately.

3. Discounts and Promotions

- Before calculating tax, discounts might be applied to the base price.
- For instance, a 10% discount reduces the base price, which then influences the tax calculation.

4. Tax-Inclusive Pricing

- Some prices are tax-inclusive, meaning the displayed price already includes

taxes.

- To find the pre-tax price, divide the total price by $(1 + \text{tax rate})$.

Practical Applications and Real-World Examples

Understanding these calculations is vital in various contexts:

- Consumers: Estimating the final amount payable when shopping online or in-store.
- Business Owners: Determining accurate pricing strategies and tax liabilities.
- Accountants and Financial Analysts: Preparing accurate financial statements and budgets.
- Policy Makers: Setting appropriate tax rates to balance revenue generation and consumer affordability.

Summary and Key Takeaways

- The base price of the computer is 968 units.
- A tax rate of 16.5% translates to a decimal of 0.165.
- The tax amount on the computer is calculated as $968 \times 0.165 = 159.72$ units.
- The total amount payable, including tax, is $968 + 159.72 = 1127.72$ units.
- Understanding percentage calculations is fundamental to accurately computing taxes and other financial adjustments.
- Variations such as discounts, multiple taxes, and tax-inclusive pricing add layers of complexity but follow similar calculation principles.

Conclusion: Mastering Financial Calculations for Informed Decision-Making

Accurately computing the total cost of an item including taxes is a crucial skill in personal finance, retail, and business operations. Through methodical calculation and an understanding of percentage principles, consumers and professionals can make better-informed decisions, avoid surprises at checkout, and maintain financial transparency.

The example of a computer costing 968 units with a 16.5% tax exemplifies the importance of precise calculations. By breaking down the steps—converting

percentage to decimal, multiplying to find tax, and summing for total cost—you gain clarity on how taxes influence final prices. This knowledge empowers you to navigate complex pricing scenarios confidently and ensures sound financial planning.

In summary, whether you're shopping for electronics, managing business expenses, or studying financial mathematics, mastering these calculation techniques is invaluable for ensuring accuracy and making informed financial decisions.

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