Cheryl Sees A Shirt She Wants To Buy That Cost $32.00.Sales Tax Is 8%. She Used The Expression 1.08p

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When shopping for clothing or other items, understanding how sales tax affects the final purchase price is essential. Cheryl, for example, sees a shirt priced at $32.00 and knows that sales tax will increase her total cost. She uses the expression 1.08p to calculate the total amount she will pay, where p represents the original price. This simple yet powerful formula helps shoppers quickly determine the total cost including tax, and it has broad applications in retail, finance, and everyday budgeting.

In this article, we'll explore the concept of sales tax, how to use the expression 1.08p to calculate total costs, and practical examples to help you understand and apply these principles in real-life shopping scenarios.

Understanding Sales Tax and Its Impact on Purchases

What Is Sales Tax?

Sales tax is a percentage added to the price of goods and services at the point of sale. It is a form of consumption tax collected by retailers on behalf of government authorities. The rate of sales tax varies depending on the jurisdiction—state, county, or city—and can range from a few percent to over 10%.

Why Is Sales Tax Important?

- Budgeting: Knowing the total cost helps consumers plan their expenses.
- Pricing Transparency: Clear understanding of the final amount payable.
- Legal Compliance: Retailers are required by law to collect the appropriate sales tax.

How Is Sales Tax Calculated?

The basic formula for calculating sales tax is:

$$ \text{Total Cost} = \text{Original Price} \times (1 + \text{Sales Tax Rate}) $$

For example, if the sales tax rate is 8%, then:

$$ \text{Total Cost} = \text{Original Price} \times 1.08 $$

This formula simplifies the process, as it combines the original price and sales tax into a single multiplication.

Using the Expression 1.08p to Calculate Total Cost

What Does 1.08p Represent?

In the expression 1.08p:
- p stands for the original price of the item.
- 1.08 is the multiplier that accounts for the 8% sales tax.

This means that multiplying the original price by 1.08 gives the total amount to be paid, including sales tax.

Step-by-Step Calculation

1. Identify the original price: In Cheryl's case, $32.00.
2. Determine the sales tax rate: 8%, which is 0.08 in decimal form.
3. Construct the multiplier: 1 + 0.08 = 1.08.
4. Calculate total cost:

$$ \text{Total Cost} = p \times 1.08 $$

Applying Cheryl's data:

$$ \text{Total Cost} = 32.00 \times 1.08 = 34.56 $$

Thus, Cheryl will pay $34.56 for the shirt.

Practical Applications of the 1.08p Formula

Shopping Scenarios

This formula is applicable in various shopping situations:

- Clothing: Calculating final prices after tax.
- Electronics: Including sales tax for gadgets and appliances.
- Groceries: In regions where applicable.

- Online Shopping: Estimating total costs before checkout.

Budgeting and Financial Planning

By understanding the total cost with sales tax, consumers can:

- Set accurate budgets.
- Avoid surprises at checkout.
- Compare prices more effectively across different stores or regions.

Business and Retail Use

Businesses can use the formula to:

- Price products with tax included.
- Generate accurate invoices.
- Calculate total revenue after sales tax.

Additional Tips for Calculating Total Price with Sales Tax

Convert Percentage to Decimal

Always convert the sales tax percentage to a decimal for calculations:

- 8% = 0.08
- 10% = 0.10
- 5% = 0.05

Use the Correct Multiplier

Add 1 to the decimal to find the multiplier:

- 8% tax → 1 + 0.08 = 1.08
- 10% tax → 1 + 0.10 = 1.10

Round Appropriately

Depending on currency standards, round to the nearest cent:

- Use two decimal places for dollars and cents.
- In Cheryl's case, $34.56 is precise.

Check Local Tax Rates

Tax rates can change; always verify the current rate in your area.

Common Mistakes to Avoid

- Using the wrong multiplier: Ensure you add the correct sales tax percentage.
- Forgetting to convert percentage to decimal: 8% is 0.08, not 8.
- Misplacing decimal points: Be precise with calculations.
- Ignoring additional taxes or fees: Some regions may have special taxes or fees.

Summary: How to Calculate Total Cost Using 1.08p

To efficiently determine the total cost of an item after an 8% sales tax, follow these steps:

1. Find the original price (p).
2. Convert the sales tax percentage to decimal form (e.g., 8% = 0.08).
3. Add 1 to this decimal to get the multiplier (e.g., 1.08).
4. Multiply the original price by the multiplier:

$$\text{Total Cost} = p \times 1.08$$

Applying this to Cheryl's example:

$$32.00 \times 1.08 = \$34.56$$

This simple multiplication accurately reflects the final amount Cheryl needs to pay for her shirt, including tax.

Conclusion

Understanding how to calculate the total purchase price after sales tax is a valuable skill for consumers and businesses alike. Cheryl's use of the expression 1.08p to determine her total cost demonstrates an effective approach to managing shopping expenses, especially when sales tax rates are known. By mastering this formula, shoppers can make informed decisions, budget effectively, and avoid surprises at checkout.

Whether you're purchasing clothing, electronics, or groceries, applying the 1.08p formula ensures you know exactly how much you'll pay, making your shopping experience transparent and financially sound. Remember to verify local tax rates and always round your final figures appropriately.

Happy shopping!

Frequently Asked Questions

What does the expression 1.08p represent in the context of Cheryl's purchase?

It represents the total cost of the shirt including sales tax, where 'p' is the original price and 1.08 accounts for the 8% sales tax applied to the price.

How do you calculate the total price of the shirt using the expression 1.08p?

You multiply the original price by 1.08, so total cost = 1.08 × $32.00.

What is the total amount Cheryl will pay for the shirt including sales tax?

Cheryl will pay $34.56, which is $32.00 multiplied by 1.08.

How can you find the original shirt price if you only know the total price including tax?

Divide the total price by 1.08 to find the original price before tax.

Why is the number 1.08 used in the expression instead of 0.08?

Because 1.08 represents the original price (1) plus the 8% sales tax (0.08), totaling 1.08 times the original price.

If the sales tax rate changes to 10%, what would be the new expression to calculate total cost?

The new expression would be 1.10p, where 1.10 accounts for the original price plus 10% tax.

How do you find the original price of the shirt using the expression 1.08p if the total price paid was $34.56?

Divide the total price by 1.08: $34.56 ÷ 1.08 = $32.00.

What is the importance of understanding the expression 1.08p when shopping?

It helps you quickly calculate the total cost including sales tax and determine the original price or the amount of sales tax paid.

Additional Resources

Cheryl Sees A Shirt She Wants To Buy That Costs $32.00. Sales Tax Is 8%. She Used The Expression 1.08p

When shopping for clothing or any retail item, understanding how sales tax impacts the total purchase price is essential. In this scenario, Cheryl sees a shirt priced at $32.00, with an 8% sales tax. She cleverly uses the expression 1.08p to determine the total cost, including tax. This approach simplifies the calculation and helps shoppers quickly estimate how much they will pay at checkout. In this guide, we'll explore the significance of this expression, break down the calculation process, and provide practical tips for applying similar methods when shopping or conducting financial calculations.

Understanding the Context: The Cost of the Shirt and Sales Tax

Before diving into the calculation, let's clarify the key elements:

- Item Price (Pre-Tax): $32.00
- Sales Tax Rate: 8%
- Expression Used: 1.08p

Cheryl’s use of the expression 1.08p is a concise way to represent the total amount payable, including sales tax. This method is rooted in the idea of multiplying the pre-tax price by a factor that accounts for the tax rate.

Why Use the Expression 1.08p?

The expression 1.08p is a compact algebraic way to calculate the total cost after applying an 8% sales tax. Here's a breakdown of what it means:

- The p stands for the original price of the item (here, $32.00).
- The 1.08 is a multiplication factor that includes the original price (represented as 1) plus the sales tax rate (8%, or 0.08).

In essence, 1.08p represents:

> Total Price = Original Price × (1 + Sales Tax Rate)

or

> Total Price = p × (1 + 0.08) = p × 1.08

Using this expression simplifies the calculation process, especially when shopping or estimating costs.

Step-By-Step Breakdown of the Calculation

Let's walk through how Cheryl would compute the total price using the expression 1.08p.

1. Identify the Original Price

- Price of the shirt = $32.00

2. Convert the Tax Rate into a Decimal

- Sales tax rate = 8% = 0.08

3. Add 1 to the Tax Rate

- 1 + 0.08 = 1.08

This factor represents the total multiplier needed to include the tax.

4. Multiply the Original Price by the Multiplier

- Total cost = $32.00 × 1.08

Calculating:

- $32.00 × 1.08 = $34.56

Therefore, Cheryl will pay $34.56 in total for the shirt, including sales tax.

Practical Application: Using the Expression in Real Shopping Scenarios

The expression 1.08p isn’t just a theoretical tool; it’s practical for everyday situations. Here’s how you can apply it:

1. Quickly Estimate Total Cost

- When you see an item’s price, multiply it by 1 + the sales tax rate (expressed as a decimal).

2. Calculate the Total for Multiple Items

- Sum the prices of several items, then multiply the total by the appropriate tax factor.

3. Determine the Tax Amount

- To find just the sales tax amount, subtract the original price from the total:

- Tax = (Original Price × 1.08) - Original Price = Original Price × 0.08

Additional Examples and Practice

Let’s explore a few more examples to reinforce understanding.

Example 1: A Book Priced at $15.00 with 8% Tax

- Total = $15.00 × 1.08 = $16.20
- Sales tax amount = $15.00 × 0.08 = $1.20

Example 2: A Jacket Costing $50.00

- Total = $50.00 × 1.08 = $54.00
- Tax amount = $50.00 × 0.08 = $4.00

Example 3: Multiple Items

Suppose you buy two items:

- Item 1: $20.00
- Item 2: $30.00

Total pre-tax = $20.00 + $30.00 = $50.00

Total after tax = $50.00 × 1.08 = $54.00

Total tax paid = $54.00 - $50.00 = $4.00

Tips for Efficient Calculation

- Use a calculator for quick multiplication, especially with decimals.
- Round appropriately: For cash transactions, round to the nearest cent.
- Memorize the factor: For an 8% sales tax, the multiplier is 1.08. For other rates, adjust accordingly (e.g., 1.07 for 7%).

Adapting the Method for Different Tax Rates

If the sales tax rate changes, simply replace 0.08 with the new rate.

Tax Rate	Multiplier	Calculation Example	Total Price for $32.00
7%	1.07	$32.00 × 1.07	$34.24

| 9% | 1.09 | $32.00 × 1.09 | $34.88 |
| 10% | 1.10 | $32.00 × 1.10 | $35.20 |

Summary: The Power of the Expression 1.08p

Using the expression 1.08p offers an elegant and efficient way to compute the total cost of an item after sales tax. It encapsulates the fundamental principle:

> Total Price = Original Price × (1 + Tax Rate)

This approach is versatile, applicable to various purchase scenarios, and helps consumers like Cheryl make quick calculations, ensuring they understand exactly how much they will pay before reaching the checkout.

Final Thoughts

Being comfortable with such calculations empowers shoppers to manage their budgets effectively. Whether you're buying clothing, groceries, or electronics, understanding how to apply the expression 1.08p (or the relevant multiplier for other tax rates) ensures transparency and confidence in your financial decisions. Remember, the key is recognizing that multiplying the pre-tax price by (1 + sales tax rate) simplifies the process and makes shopping more straightforward.

Happy shopping, and may your calculations always be accurate!

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