

A) 130 Is What Percent Of 650?Percent Proportion -Percent Equation-B) \$5.40 Is What Percent Of \$4.50?

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Understanding how to calculate percentages is a fundamental skill in mathematics that applies to various real-life situations, such as financial calculations, data analysis, and everyday decision-making. In this article, we will explore two common percentage problems: determining what percentage 130 is of 650, and figuring out what percentage \$5.40 is of \$4.50. These problems involve core concepts like percent proportion and percent equations, which are essential tools for solving a wide range of mathematical challenges.

Part 1: Calculating What Percent 130 Is Of 650

Understanding the Problem

The question "130 is what percent of 650?" asks us to find the percentage that 130 represents relative to 650. This is a typical percentage problem where we compare a part (130) to a whole (650) and express that comparison as a percentage.

Basic Concepts and Formulas

To solve this type of problem, we rely on the basic percentage formula:

$$\text{Percent} = \left(\frac{\text{Part}}{\text{Whole}} \right) \times 100$$

Where:

- Part is the numerator (the portion we are examining, in this case, 130).
- Whole is the denominator (the total amount, here, 650).
- The result is multiplied by 100 to convert it into a percentage.

Step-by-Step Solution

Let's apply this formula to our problem:

1. Identify the part and the whole:

- Part = 130
- Whole = 650

2. Substitute into the formula:

$$\text{Percent} = \left(\frac{130}{650} \right) \times 100$$

3. Simplify the fraction:

$$\frac{130}{650} = \frac{130 \div 130}{650 \div 130} = \frac{1}{5}$$

4. Convert to a decimal:

$$\frac{1}{5} = 0.2$$

5. Multiply by 100 to find the percentage:

$$0.2 \times 100 = 20\%$$

Answer: 130 is 20% of 650.

Implications and Applications

Understanding how to find what percent one number is of another has many applications, such as:

- Calculating discounts during sales.
- Determining grade percentages.
- Analyzing data proportions.

Part 2: Calculating What Percent \$5.40 Is Of

\$4.50

Understanding the Problem

This problem asks, "What percentage is \$5.40 of \$4.50?" which involves similar calculations but applied to monetary values. It might seem counterintuitive because the numerator (\$5.40) is larger than the denominator (\$4.50), indicating the percentage will be over 100%.

Applying the Percentage Formula

Again, we use the same fundamental formula:

$$\text{Percent} = \left(\frac{\text{Part}}{\text{Whole}} \right) \times 100$$

Here:

- Part = \$5.40
- Whole = \$4.50

Step-by-Step Calculation

1. Substitute the values:

$$\text{Percent} = \left(\frac{5.40}{4.50} \right) \times 100$$

2. Simplify the fraction:

$$\frac{5.40}{4.50} = \frac{5.40 \div 1.80}{4.50 \div 1.80} = \frac{3}{2.5}$$

Alternatively, directly dividing:

$$5.40 \div 4.50 = 1.2$$

3. Convert to a decimal:

$$1.2$$

1.2

\]

4. Multiply by 100 to find the percentage:

\[

$1.2 \times 100 = 120\%$

\]

Answer: \$5.40 is 120% of \$4.50.

Understanding the Result

Since the percentage exceeds 100%, it indicates that \$5.40 is more than the original \$4.50. This kind of calculation is useful in contexts like:

- Comparing expenses or revenues.
- Calculating markups or profit margins.
- Evaluating increases in prices or values.

Additional Concepts: Percent Proportion and Percent Equation

Percent Proportion Method

The percent proportion is a method that involves setting up a proportion to find an unknown value. For the general problem "What percent of a number is another number?", the proportion looks like:

\[

$\frac{\text{Part}}{\text{Whole}} = \frac{\text{Percent}}{100}$

\]

Where:

- Part and Whole are known or given.
- Percent is the unknown to solve for.

Example: To find what percent 130 is of 650, set up:

\[

$\frac{130}{650} = \frac{x}{100}$

\]

Cross-multiplied:

$$\begin{aligned} & \backslash[\\ & 130 \times 100 = 650 \times x \\ & \backslash] \end{aligned}$$

Solve for x:

$$\begin{aligned} & \backslash[\\ & x = \frac{130 \times 100}{650} = \frac{13000}{650} = 20 \\ & \backslash] \end{aligned}$$

So, 130 is 20% of 650.

Percent Equation Method

Alternatively, the percent equation approach involves:

$$\begin{aligned} & \backslash[\\ & \text{Part} = \left(\frac{\text{Percent}}{100} \right) \times \text{Whole} \\ & \backslash] \end{aligned}$$

To find the percent, rearranged as:

$$\begin{aligned} & \backslash[\\ & \text{Percent} = \left(\frac{\text{Part}}{\text{Whole}} \right) \times 100 \\ & \backslash] \end{aligned}$$

This method is straightforward and often easier when the part and whole are known, and you need to find the percentage.

Practical Tips for Calculating Percentages

- Always identify whether you are looking for a percentage, part, or whole.
- Convert fractions to decimals for easier calculation.
- Remember that percentages over 100% indicate the part exceeds the whole.
- Use calculator aids for complex or large numbers.
- Practice setting up proportions to visualize the relationship.

Real-Life Examples and Applications

Calculating percentages is integral to many everyday activities such as:

- Shopping: Determining discount rates or final prices.
- Finance: Calculating interest rates, profit margins, or investment returns.
- Education: Computing grades or test scores as percentages.
- Health: Tracking body measurements or nutritional information.

Conclusion

Mastering the calculation of percentages, whether using the percent formula, proportion, or equations, empowers you to analyze and interpret numerical data effectively. Whether you're determining what percent one number is of another or evaluating monetary proportions, these skills are essential in academic, professional, and personal contexts. Remember, practicing these calculations builds confidence and sharpens your mathematical intuition, making complex problems more approachable and manageable.

Frequently Asked Questions

What percent of 650 is 130?

130 is 20% of 650 because $(130 / 650) \times 100 = 20\%$

How do you find what percent 130 is of 650?

Divide 130 by 650 and multiply the result by 100: $(130 \div 650) \times 100 = 20\%$

If \$5.40 is what percent of \$4.50?

To find the percentage, divide 5.40 by 4.50 and multiply by 100: $(5.40 \div 4.50) \times 100 = 120\%$

What is the percentage increase from \$4.50 to \$5.40?

The increase is \$0.90. Calculate percentage increase: $(0.90 \div 4.50) \times 100 = 20\%$

How can I express \$5.40 as a percentage of \$4.50?

Divide 5.40 by 4.50 and multiply by 100: $(5.40 \div 4.50) \times 100 = 120\%$, so \$5.40 is 120% of \$4.50.

Additional Resources

130 Is What Percent Of 650? Percent Proportion - Percent Equation

Understanding how to determine what percentage one number is of another is a fundamental skill in mathematics, especially in areas like finance, statistics, and everyday problem-solving. The question "130 is what percent of 650?" is a classic example of applying the percent proportion and percent equation concepts. This type of problem helps develop a deeper comprehension of ratios, proportions, and percentages, which are essential tools for

analyzing data and making informed decisions.

In this article, we'll delve into the details of solving this problem, explore the underlying concepts, and then extend the discussion to similar problems, such as calculating what percentage a dollar amount is of another. By breaking down each question step-by-step, highlighting key features, and discussing best practices, readers will gain a thorough understanding of percent calculations.

Understanding the Percent Proportion and Percent Equation

Before tackling specific problems, it's important to understand the foundational concepts:

- Percent Proportion: A method that involves setting up a proportion between two ratios—one involving the unknown percentage and the other involving known quantities.
- Percent Equation: A direct algebraic approach using the relation: $(\text{Part} / \text{Whole}) \times 100 = \text{Percent}$.

Both methods are powerful and can be used interchangeably, but understanding their mechanics helps in choosing the most appropriate approach for different problems.

Problem A: 130 Is What Percent Of 650?

Step-by-Step Solution

Let's analyze this problem systematically.

Step 1: Identify the known and unknown quantities

- Part (the numerator): 130
- Whole (the denominator): 650
- Percent (the unknown): x

Step 2: Set up the percent equation

Using the percent equation:

$$\left[\frac{\text{Part}}{\text{Whole}} \times 100 = \text{Percent} \right]$$

Substituting the known values:

$$\left[\frac{130}{650} \times 100 = x \right]$$

Step 3: Perform the calculation

Calculate the fraction:

$$\left[\frac{130}{650} = 0.2 \right]$$

Multiply by 100 to find the percentage:

$$\left[0.2 \times 100 = 20 \right]$$

Answer:

130 is 20% of 650.

Key Features and Insights

- The problem reduces to finding the percentage representation of a part relative to a whole.
- Simplifying the fraction before multiplying by 100 can make calculations easier.
- The answer (20%) indicates that 130 is one-fifth (or 20%) of 650.

Pros and Cons of the Percent Equation Method

Pros:

- Straightforward and easy to understand.
- Works well with direct numbers and simple fractions.
- Helps reinforce the relationship between parts and wholes.

Cons:

- Can become cumbersome with more complex problems.
- Requires an understanding of algebraic manipulation.

Alternative Approach: Using Proportions

Instead of directly applying the percent equation, you can set up a proportion:

$$\frac{\text{Part}}{\text{Whole}} = \frac{\text{Percent}}{100}$$

Plugging in the known values:

$$\frac{130}{650} = \frac{x}{100}$$

Cross-multiplied:

$$130 \times 100 = 650 \times x$$

$$13,000 = 650x$$

Solve for (x) :

$$x = \frac{13,000}{650} = 20$$

Thus, confirming the previous answer.

Problem B: \$5.40 Is What Percent Of \$4.50?

Step-by-Step Solution

Let's proceed similarly.

Step 1: Identify the knowns and unknowns

- Part: \$5.40
- Whole: \$4.50
- Percent: x (unknown)

Step 2: Set up the percent equation

$$\frac{\text{Part}}{\text{Whole}} \times 100 = x$$

Substitute the values:

$$\frac{5.40}{4.50} \times 100 = x$$

Step 3: Calculate the fraction

$$\frac{5.40}{4.50} = 1.2$$

Multiply by 100:

$$1.2 \times 100 = 120$$

Answer:

\$5.40 is 120% of \$4.50.

Analysis and Interpretation

- The calculation shows that \$5.40 exceeds \$4.50 by 20%, meaning it's 120% of that amount.
- This scenario is common in financial contexts, such as markups, discounts, or interest calculations.

Features and Practical Applications

- Useful for determining markups or profit margins.
- Helps in understanding how a portion compares to a total, especially when the number exceeds 100%, indicating a value greater than the whole.

Additional Tips for Percent Calculations

- Always ensure the units are consistent (e.g., dollars with dollars).
- Convert fractions to decimals for easier calculations.
- When the percentage exceeds 100%, it indicates the part is larger than the whole.
- Use calculators for complex fractions or to improve accuracy.

Common Pitfalls to Avoid

- Mixing up part and whole in the proportion.
- Forgetting to multiply by 100 when converting to a percentage.
- Confusing percentage increase/decrease with direct percentage calculation.
- Ignoring units in financial calculations, leading to errors.

Summary of Key Points

Aspect	Explanation
Methodology	Use either the percent equation or proportion method to find the percentage.
Calculation	Divide the part by the whole, then multiply by 100 to get the percentage.
Interpretation	Values over 100% indicate the part exceeds the whole; under 100% indicates it's less.
Practical Use	Applied in finance, statistics, comparisons, and data analysis.

Conclusion

Understanding how to find what percent one number is of another is a vital skill with broad applications. The problems "130 is what percent of 650?" and "\$5.40 is what percent of \$4.50?" exemplify core concepts in percentage calculations. By mastering these techniques—using the percent equation or proportions—users can confidently solve a variety of real-world problems involving ratios, comparisons, and data interpretation.

Practicing these calculations enhances numerical literacy, critical thinking, and problem-solving skills. Remember, clarity in setting up the problem, attention to detail in calculations, and understanding the context are key to accurately determining percentages. Whether you're analyzing financial data, interpreting survey results, or managing everyday calculations, these skills form a crucial foundation for informed decision-making.

In summary:

- 130 is 20% of 650.
- \$5.40 is 120% of \$4.50.

These calculations demonstrate the power and simplicity of percentage concepts, guiding you in a wide array of mathematical and practical scenarios.

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