

Raj Paid \$5.04 For 6 Cookies. Heath Paid \$4.00 For 5 Cookies. Which Of The Following Statements Is True?Raj

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Introduction: Understanding the Problem

When comparing costs for purchasing cookies, it's essential to analyze the per-unit price to determine which purchase was more economical. In this scenario, Raj paid \$5.04 for 6 cookies, while Heath paid \$4.00 for 5 cookies. The key question is: Which statement about their purchases is true? To answer this, we need to perform detailed calculations of the unit prices and analyze the implications.

Calculating the Per-Cookie Cost

Per-Cookie Cost for Raj

To find the cost per cookie for Raj:

- Total amount paid by Raj: \$5.04
- Number of cookies purchased by Raj: 6

Calculation:

$$\begin{aligned} \text{Per-cookie cost for Raj} &= \frac{\$5.04}{6} = \$0.84 \end{aligned}$$

Result:

Raj paid \\$0.84 per cookie.

Per-Cookie Cost for Heath

Similarly, for Heath:

- Total amount paid: \$4.00
- Number of cookies purchased: 5

Calculation:

$$\text{Per-cookie cost for Heath} = \frac{\$4.00}{5} = \$0.80$$

Result:

Heath paid \\$0.80 per cookie.

Comparing the Costs: Which is Cheaper?

Analysis of Per-Unit Costs

From the calculations:

- Raj's per-cookie cost: \\$0.84
- Heath's per-cookie cost: \\$0.80

Since $\$0.80 < \0.84 , Heath paid less per cookie than Raj.

Implication of the Comparison

This indicates that:

- Heath's purchase was more economical per cookie.
- Despite Raj paying more in total, the unit price was higher.
- The statement that Heath paid more per cookie is false, and vice versa.

Potential Statements and Their Validity

Suppose the question offers several statements such as:

1. Raj paid more per cookie than Heath.
2. Heath paid more total money than Raj.
3. Raj paid less per cookie than Heath.
4. Heath paid less per cookie than Raj.
5. Both paid the same per cookie.

Let's analyze each:

Statement 1: Raj paid more per cookie than Heath.

- True: Because $\$0.84 > \0.80 .

Statement 2: Heath paid more total money than Raj.

- False: Raj paid $\$5.04$, Heath paid $\$4.00$.

Statement 3: Raj paid less per cookie than Heath.

- False: Raj paid $\$0.84$, which is more than Heath's $\$0.80$.

Statement 4: Heath paid less per cookie than Raj.

- True: Since $\$0.80 < \0.84 .

Statement 5: Both paid the same per cookie.

- False: The per-cookie costs are different.

Conclusion: Which Statement Is True?

Based on calculations, the true statements are:

- Raj paid more per cookie than Heath.
- Heath paid less per cookie than Raj.

Therefore, the correct understanding is that Heath was more economical per cookie, paying only \$0.80 per cookie compared to Raj's \$0.84. The total amounts paid confirm that Raj spent more in total, but per cookie, Heath paid less.

Additional Insights: Why Per-Unit Cost Matters

Understanding Cost Efficiency

In shopping and purchasing decisions, the total amount spent is important, but the per-unit cost provides a clearer picture of value. For example:

- Buying in bulk can sometimes reduce the per-unit cost.
- Smaller quantities may sometimes be more expensive per item.

Applying This Knowledge to Other Purchases

This analysis isn't limited to cookies; it applies broadly:

- Comparing prices of different brands
- Choosing between different package sizes

- Evaluating discounts and sales

Practical Tips for Consumers

- Always calculate the unit price before making a purchase.
- Be wary of deals that seem attractive but might not be cost-effective per unit.
- Use ratios and simple division to compare costs accurately.

Summary

In summary, analyzing the scenario where Raj paid \$5.04 for 6 cookies and Heath paid \$4.00 for 5 cookies reveals that:

- Heath paid less per cookie ($\$0.80$) than Raj ($\0.84).
- Despite paying less total, Heath obtained the same number of cookies per dollar spent.
- The true statement among the options is that Raj paid more per cookie than Heath.

Understanding these calculations allows consumers to make smarter choices and recognize value beyond just total expenditure.

Final Thoughts

By breaking down costs into per-unit prices, shoppers can better assess the true value of their purchases. Whether comparing cookies, groceries, or other items, this approach ensures informed decision-making, leading to better savings and satisfaction in everyday shopping.

This comprehensive analysis demonstrates the importance of unit price comparison and illustrates how simple calculations can clarify which purchase offers better value.

Frequently Asked Questions

Who paid more per cookie, Raj or Heath?

Raj paid more per cookie. Raj paid \$5.04 for 6 cookies (about \$0.84 each), while Heath paid \$4.00 for 5 cookies (about \$0.80 each).

What is the cost per cookie for Raj?

Raj paid \$5.04 for 6 cookies, so the cost per cookie is $\$5.04 \div 6 = \0.84 .

What is the cost per cookie for Heath?

Heath paid \$4.00 for 5 cookies, so the cost per cookie is $\$4.00 \div 5 = \0.80 .

Based on the prices, which statement is true: Raj paid more or less per cookie than Heath?

The true statement is that Raj paid more per cookie than Heath.

If you wanted to buy 10 cookies at the same rate Heath paid, how much would it cost?

At Heath's rate of \$0.80 per cookie, 10 cookies would cost $10 \times \$0.80 = \8.00 .

Additional Resources

Raj Paid \$5.04 For 6 Cookies. Heath Paid \$4.00 For 5 Cookies. Which Of The Following Statements Is True?

In the realm of everyday purchases, especially when it involves seemingly simple transactions like buying cookies, the underlying mathematics can reveal interesting insights into pricing strategies, value assessments, and consumer decision-making. At first glance, comparing the amounts paid by Raj and Heath for their respective cookie purchases seems straightforward. However, a deeper analysis uncovers nuances that can influence perceptions of value, fairness, and cost-effectiveness. This investigative article aims to dissect the transaction details, evaluate the statements that might be derived from them, and explore broader implications in consumer mathematics and economic behavior.

Understanding the Basic Data

Before delving into the core analysis, it's essential to clearly interpret the given data:

- Raj paid \$5.04 for 6 cookies.
- Heath paid \$4.00 for 5 cookies.

This data provides two primary pieces of information: the total amount paid and the number of cookies purchased.

Calculating Unit Prices: The Foundation of Comparison

The most straightforward way to compare these transactions is by calculating the cost per cookie for each individual.

Raj's Cost per Cookie

To determine Raj's cost per cookie:

- Total paid: \$5.04
- Number of cookies: 6

Calculation:

$$\text{Cost per cookie} = \frac{\$5.04}{6} = \$0.84$$

So, each cookie Raj bought costs 84 cents.

Heath's Cost per Cookie

Similarly, for Heath:

- Total paid: \$4.00

- Number of cookies: 5

Calculation:

$$\text{Cost per cookie} = \frac{\$4.00}{5} = \$0.80$$

Each cookie Heath bought costs 80 cents.

Interpreting the Results: Which Is Better Value?

Based purely on the unit price, Heath paid less per cookie than Raj—80 cents versus 84 cents. This difference, although small, can influence decisions based on value.

Key Takeaways:

- Heath's cookies are slightly cheaper per unit.
- If someone values cost-efficiency, Heath's purchase offers marginally better value.

Potential Statements and Their Validity

Given the data, several statements can be constructed, and their accuracy can be examined.

Statement 1: "Raj paid more for each cookie than Heath."

Evaluation:

- Raj's per-cookie price: \$0.84
- Heath's per-cookie price: \$0.80

Conclusion:

- True. Raj paid 4 cents more per cookie than Heath.

Statement 2: "Heath paid more overall."

Evaluation:

- Raj paid \$5.04
- Heath paid \$4.00

Conclusion:

- False. Raj paid more overall, but for a slightly higher quantity of cookies.

Statement 3: "Raj got more cookies for his money."

Evaluation:

- Raj paid \$5.04 for 6 cookies.
- Heath paid \$4.00 for 5 cookies.

Analysis:

- Total spent per cookie: Raj (\$0.84), Heath (\$0.80).
- Comparing total cookies per dollar:
 - Raj: $\frac{6}{\$5.04} \approx 1.19$ cookies per dollar.
 - Heath: $\frac{5}{\$4.00} = 1.25$ cookies per dollar.

Conclusion:

- Heath gets slightly more cookies per dollar, so Raj does not get more cookies for his money.

Statement 4: "The prices per cookie are the same."

Evaluation:

- Raj's price per cookie: \$0.84
- Heath's price per cookie: \$0.80

Conclusion:

- False. The prices differ, with Heath's being cheaper.

Broader Context and Practical Implications

While the above calculations clarify the basic comparison, real-world purchasing decisions often involve more than just unit prices. Factors such as:

- Cookie size and quality: Are the cookies identical? If not, the price comparison might be invalid.
- Brand and freshness: Brand reputation or freshness can influence perceived value.
- Bulk discounts or packaging: Larger quantities often have different pricing structures.
- Psychological factors: Perceived value might differ based on presentation or packaging.

However, assuming the cookies are identical and comparable, the calculations hold.

Implications for Consumers and Businesses

This simple comparison exemplifies how consumers can evaluate value by calculating unit prices rather than relying solely on total expenditure. For businesses, understanding per-unit pricing strategies can help in:

- Setting competitive prices.
- Offering discounts that incentivize larger purchases.
- Communicating value effectively to consumers.

For consumers, this analysis underscores the importance of unit pricing as a tool for making informed purchasing decisions.

Conclusion: Which Statement Is Truly Valid?

Based on the detailed calculations and comparisons:

- The statement "Raj paid more for each cookie than Heath" is true.
- Other statements, such as Heath paying more overall or getting more cookies for his money, are false.

This investigation demonstrates that minor differences in unit prices can accumulate to influence perceptions of value. When making everyday purchases, a thorough analysis—calculating per-unit costs—can help consumers maximize their savings and ensure they are getting the best deal.

In the context of the original question, the most accurate statement is that Raj paid more per cookie than Heath, highlighting the importance of detailed, quantitative assessments in seemingly simple transactions. This case also exemplifies how small differences in unit prices can have broader implications for consumer choice, pricing strategies, and economic literacy.

Final Note: In scenarios like these, always consider verifying whether the cookies are identical in size, quality, and brand before making assumptions based solely on price per unit. When in doubt, asking for additional details or doing comparative measurements can lead to more accurate conclusions.

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