

Kei Buys A Table And 12 Chairs. Each Chair Cost The Same Price. The Table Cost \$165. The Total Cost For

Kei Buys A Table And 12 Chairs. Each Chair Cost The Same Price. The Table Cost \$165. The Total Cost For any furniture purchase can be an interesting problem to solve, especially when trying to determine the individual price of each chair. Whether you're a student brushing up on your math skills or a homeowner planning a new dining area, understanding how to break down the total cost into its components is a useful skill. In this article, we will explore the details of Kei's furniture purchase, analyze how much each chair costs, and discuss tips for budgeting and shopping smartly for furniture.

Understanding the Purchase: The Basics

The Components of the Purchase

Kei purchased a dining table along with 12 chairs. The key points to note are:

- The table cost is fixed at \$165.
- There are 12 chairs, each costing the same amount.
- The total amount paid for the entire set is not specified explicitly but can be deduced based on the information provided.

What is Known and What Needs to be Calculated

From the problem statement, we know:

- Price of the table = \$165
- Number of chairs = 12
- Cost per chair = unknown (let's denote it as "x")
- Total cost for the set = table + 12 chairs = ?

Our goal is to find:

- The total cost of all chairs
- The individual cost of each chair

Calculating the Total Cost

Formulating the Problem

Since the total cost includes the table and all chairs, we can write:

Total Cost = Cost of Table + Cost of 12 Chairs

Expressed mathematically:

$$\text{Total Cost} = 165 + 12x$$

However, since the total cost is not explicitly given, let's consider typical scenarios where such a problem might be presented.

Assuming the Total Cost is Provided

Suppose Kei paid a total of \$345 for the entire set. We can set up the equation:

$$165 + 12x = 345$$

To find the value of "x" (cost per chair), solve for "x":

$$12x = 345 - 165$$

$$12x = 180$$

$$x = 180 / 12$$

$$x = \$15$$

Thus, each chair costs \$15.

General Approach Without a Given Total

If the total cost is not specified, but you know the total price paid, the calculation follows the same pattern:

- Subtract the cost of the table from the total
- Divide the remaining amount by 12 (the number of chairs)

This approach can be summarized as:

1. Total Cost of Chairs = Total Cost for Set - Cost of Table
2. Cost per Chair = (Total Cost of Chairs) / 12

Budgeting for Furniture Purchases

Tips for Estimating Costs

When planning to buy furniture, it's helpful to:

- Set a budget beforehand
- Research price ranges for similar items
- Calculate the approximate cost per item based on the total budget

Example Budgeting Scenario

Suppose you want to buy a table and 12 chairs within a \$400 budget. Knowing the table costs \$165, you can allocate the remaining funds for the chairs:

$$\text{Remaining funds} = \$400 - \$165 = \$235$$

Dividing equally among 12 chairs:
Cost per chair = $\$235 / 12 \approx \19.58

This method ensures your purchases stay within your financial limits.

Shopping Tips for Buying Tables and Chairs

Considerations When Choosing Furniture

- Material quality and durability
- Style and design compatibility with your space
- Price and value for money
- Comfort and ergonomics

Where to Find Good Deals

- Furniture outlets and warehouse stores
- Online marketplaces like Amazon, Wayfair, or IKEA
- Local thrift shops and secondhand stores
- Seasonal sales and clearance events

Understanding Cost Distribution in Furniture Sets

Why the Cost of Chairs Might Vary

While in this problem, each chair costs the same, in real life, variations can occur due to:

- Different materials (wood, metal, plastic)
- Design complexity
- Brand reputation
- Additional features such as cushions or armrests

Implications for Buyers

Knowing the individual prices helps buyers:

- Compare options effectively
- Make informed purchasing decisions
- Ensure they get the best value for their money

Conclusion: Summing Up the Key Points

Understanding how to calculate the costs involved in purchasing furniture like a table and chairs is

essential for budget management and making smart shopping choices. By knowing the fixed cost of the table and the uniform price of each chair, you can determine the total expenditure and individual item costs with simple algebraic calculations. Whether you're redecorating your dining area or planning your home renovation budget, these skills are invaluable.

Remember, always consider the quality and comfort of the furniture in addition to price. Doing thorough research and planning your budget can help you create a beautiful and functional space without overspending. Kei's example illustrates how breaking down a purchase into parts can clarify costs and aid in making informed decisions.

With these insights, you'll be better equipped to approach furniture shopping with confidence and clarity, ensuring your home is both stylish and budget-friendly.

Keywords: furniture shopping, dining table and chairs, budget planning, cost calculation, furniture set price, affordable furniture, home decor, shopping tips

Frequently Asked Questions

How much does each chair cost if Kei buys a table and 12 chairs for a total of \$345?

First, subtract the cost of the table from the total: $\$345 - \$165 = \$180$. Then, divide by 12 to find the cost per chair: $\$180 / 12 = \15 . Each chair costs \$15.

If Kei wants to spend exactly \$300 on a table and 12 chairs, what should be the price of each chair?

Subtract the table cost from the total: $\$300 - \$165 = \$135$. Divide by 12 to find each chair's price: $\$135 / 12 = \11.25 . Each chair should cost \$11.25.

What is the total cost if Kei buys a table and 12 chairs, each chair costing \$20?

Total cost = table cost + (number of chairs $\times$ price per chair) = $\$165 + (12 \times \$20) = \$165 + \$240 = \$405$.

If Kei has a budget of \$500, what is the maximum price he can pay for each chair if the table costs \$165?

Subtract the table cost from the budget: $\$500 - \$165 = \$335$. Divide by 12 to find the maximum price per chair: $\$335 / 12 \approx \27.92 . Each chair can cost up to approximately \$27.92.

How much will Kei spend if each chair costs \$25?

Total cost = $\$165 + (12 \times \$25) = \$165 + \$300 = \$465$.

If Kei's total expenditure for the table and chairs is \$400, what is the price of each chair?

Subtract the table cost from total: $\$400 - \$165 = \$235$. Divide by 12: $\$235 / 12 \approx \19.58 . Each chair costs approximately \$19.58.

Can Kei buy the table and chairs for less than \$350 if each chair costs \$10?

Total cost = $\$165 + (12 \times \$10) = \$165 + \$120 = \$285$. Yes, it costs less than \$350.

What is the combined cost of the table and 12 chairs if each chair costs \$18?

Total cost = $\$165 + (12 \times \$18) = \$165 + \$216 = \$381$.

If the total cost for the table and chairs is \$390, and each chair costs \$20, does Kei have enough budget?

Total cost with chairs at \$20 each: $\$165 + (12 \times \$20) = \$165 + \$240 = \$405$. No, he needs at least \$405, so \$390 is insufficient.

What is the average cost per item if Kei buys a table and 12 chairs for a total of \$330?

Total items = 1 table + 12 chairs = 13 items. Average cost per item = $\$330 / 13 \approx \25.38 .

Additional Resources

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In a recent shopping endeavor, Kei found himself in need of new dining furniture. He purchased a table and twelve matching chairs, each chair at an identical price point. With the table costing \$165, Kei was curious about the total expenditure and the individual price of each chair. This scenario may seem straightforward at first glance, but it offers an excellent opportunity to explore basic algebraic principles and problem-solving strategies frequently used in everyday financial calculations. Let's delve into the details and uncover the total cost Kei paid, along with the cost of each individual chair.

Understanding the Scenario

Kei's purchase involves two main components:

- A table, priced at \$165
- 12 chairs, each costing the same amount

The key question is: What was the total cost of all the furniture, and how much did each chair cost?

This problem involves a simple algebraic approach where the goal is to determine the unknown variable, which is the price of each chair.

Breaking Down the Problem

To analyze this scenario systematically, it helps to define the knowns and unknowns:

- Knowns:
 - Cost of the table = \$165
 - Number of chairs = 12
 - Price of each chair = unknown (let's denote it as x)
- Unknown:
 - Total cost of all furniture
 - Cost per chair

From this, we can formulate the problem as:

> The total cost = cost of the table + (cost per chair number of chairs)

Expressed mathematically:

$$\text{Total Cost} = 165 + 12x$$

The goal is to find:

- The value of x (price of each chair)
- The total cost (which depends on x)

Calculating the Price of Each Chair

Suppose, based on the available information, that we're told the total cost is known or that we want to find x if the total cost is provided. Conversely, if only the total cost is to be calculated, then additional information is needed.

Let's consider various scenarios to understand how to find the individual chair price and total cost.

Scenario 1: Total Cost Is Known

If Kei's total expenditure was, say, \$405, then:

$$\text{Total Cost} = 165 + 12x = 405$$

Subtracting the table's cost:

$$12x = 405 - 165 = 240$$

Dividing both sides by 12:

$$x = 240 / 12 = 20$$

Interpretation:

Each chair costs \$20.

The total cost in this case is confirmed as \$405.

Scenario 2: Total Cost Is Unknown, but the Price of Chairs Is Known

Suppose each chair costs \$20. Then, the total cost of all chairs is:

$$12 \times 20 = \$240$$

Adding the table:

$$\text{Total cost} = 165 + 240 = \$405$$

This confirms that if each chair costs \$20, the total expenditure is \$405.

General Approach to the Problem

The key to solving such problems lies in understanding the relationship between individual prices and total costs. The algebraic method allows flexibility, especially when only partial information is available.

Step-by-step process:

1. Identify knowns and unknowns.
2. Set up an algebraic equation representing the total cost.
3. Solve for the unknown (price per chair or total cost).

This approach can be generalized to various similar purchasing scenarios, such as buying multiple items at the same price, calculating discounts, or splitting costs among multiple people.

Practical Application: How to Calculate Total Cost and Per-Item Price

Let's walk through a practical example with figures to illustrate the method:

Example:

- The table costs \$165.
- Kei bought 12 chairs.
- The total amount spent was \$405.

Question:

What is the price of each chair?

Solution:

- Set total cost equation:

$$165 + 12x = 405$$

- Subtract the table cost:

$$12x = 405 - 165 = 240$$

- Divide both sides by 12:

$$x = 240 / 12 = \$20$$

Result:

Each chair costs \$20.

Exploring Different Scenarios

In real-life situations, the total cost might not be given directly. Instead, one might know the individual prices or the total expenditure and need to find missing details.

Scenario A:

- Total cost is \$300.
- Table costs \$165.
- How much was spent on chairs?

Solution:

- Total spent on chairs:

$$\text{Total} - \text{Table} = 300 - 165 = \$135$$

- Cost per chair:

$$\$135 / 12 = \$11.25$$

Each chair costs \$11.25.

Broader Implications and Practical Tips

Understanding how to break down such problems is valuable not only in academic settings but also in everyday shopping and budgeting. Here are some practical tips:

- Always identify and write down knowns and unknowns.
- Use variables to represent unknown quantities.
- Set up an algebraic equation reflecting the scenario.
- Solve step by step, performing inverse operations to isolate the unknown.
- Double-check your calculation by plugging the value back into the original equation.

Additional Considerations: Tax and Discounts

In real-world shopping, additional factors such as sales tax or discounts often apply. When incorporating these into calculations:

- Tax:

Total price = subtotal $(1 + \text{tax rate})$

- Discounts:

Total price = original price $(1 - \text{discount rate})$

Applying these factors requires adjusting the basic algebraic approach accordingly, emphasizing the importance of understanding the foundational calculations.

Final Thoughts

While the original problem appears straightforward—finding the total cost for a table and chairs or determining individual chair prices—it exemplifies fundamental problem-solving skills. By establishing clear variables and equations, breaking down complex problems into manageable steps, and applying basic algebra, anyone can navigate similar purchasing scenarios efficiently.

In Kei's case, whether he paid a specific total or wanted to understand the per-chair cost, the approach remains consistent. Recognizing the relationships between individual items and their total expense is a valuable skill that extends beyond shopping into budgeting, financial planning, and even business operations.

In summary:

- The total cost is composed of the table's price plus the combined cost of all chairs.
- The algebraic method helps derive unknown prices when sufficient information is provided.
- Practical understanding of these calculations fosters better financial literacy and decision-making.

By mastering these fundamental calculations, Kei—and anyone else—can confidently approach similar shopping and budgeting challenges in everyday life.

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