

The Four Building Blocks of Accounting Math

Practice Problems

Question 1: Totaling Daily Expenses (Philippines)

Cris is tracking her food expenses for the weekend in Santa Josefa. On Saturday, she spent P150 on breakfast, P250 on lunch, and P400 on dinner. What was her total food expense for Saturday?

Answer and Explanation:

This problem requires adding individual costs to find a total.

1. **Operation:** Addition
2. **Calculation:** P150 (Breakfast) + P250 (Lunch) + P400 (Dinner) = **P800**

Her total food expense for Saturday was P800.

Question 2: Budget Variance (America)

Patricia set a monthly budget of \$120 for her creative journaling supplies. This month, she spent \$35 on pens, \$22 on stickers, and \$45 on a new journal. How much was she under her budget?

Answer and Explanation:

This is a two-step problem: first add the costs, then subtract the total from the budget.

1. **Step 1 (Addition):** Calculate total spending.
 - o **Calculation:** \$35 + \$22 + \$45 = \$102 (Total Spent)
2. **Step 2 (Subtraction):** Find the difference between the budget and the amount spent.
 - o **Calculation:** \$120 (Budget) - \$102 (Total Spent) = **\$18**

Patricia was \$18 under her budget.

Question 3: Calculating Total Cost (Japan)

Jenelie is at a bookstore in Tokyo. She buys 4 manga volumes that cost ¥700 each. What is the total cost of her purchase before tax?

Answer and Explanation:

This problem uses multiplication as a shortcut for repeated addition.

1. **Operation:** Multiplication
2. **Calculation:** $4 \text{ (volumes)} \times \text{¥}700 \text{ (price per volume)} = \text{¥}2,800$

The total cost of her purchase is ¥2,800.

Question 4: Calculating Hourly Pay (Philippines)

Cris worked for 8 hours as a virtual assistant and earned a total of P4,000. What is her hourly rate?

Answer and Explanation:

This problem requires division to break down a total amount into equal parts.

1. **Operation:** Division
2. **Calculation:** $\text{P}4,000 \text{ (Total Pay)} \div 8 \text{ (Hours)} = \text{P}500 \text{ per hour}$

Her hourly rate is P500.

Question 5: Calculating Profit from a Sale (America)

Patricia buys plain tote bags for \$4 each, and spends \$2 on paint for each bag to customize them. She sells one finished custom bag for \$25. How much profit did she make on that one bag?

Answer and Explanation:

First, find the total cost to make the bag, then subtract that cost from the selling price.

1. **Step 1 (Addition):** Calculate the total cost of one bag.
 - o **Calculation:** $\text{\$}4 \text{ (bag)} + \text{\$}2 \text{ (paint)} = \text{\$}6 \text{ (Total Cost)}$
2. **Step 2 (Subtraction):** Calculate the profit.
 - o **Calculation:** $\text{\$}25 \text{ (Selling Price)} - \text{\$}6 \text{ (Total Cost)} = \text{\$}19 \text{ (Profit)}$

Patricia made a profit of \$19 on the bag.

Question 6: Calculating Take-Home Pay (Philippines)

Zyrine's gross pay for the month is P25,000. Her employer withholds P1,500 for taxes and P1,000 for social contributions (SSS, PhilHealth). What is her net (take-home) pay?

Answer and Explanation:

First, add all deductions together, then subtract the total deductions from the gross pay.

1. **Step 1 (Addition):** Find the total deductions.

- **Calculation:** $P1,500 + P1,000 = P2,500$ (Total Deductions)
- 2. **Step 2 (Subtraction):** Calculate the net pay.
 - **Calculation:** $P25,000$ (Gross Pay) - $P2,500$ (Total Deductions) = **P22,500**

Zyrine's take-home pay is P22,500.

Question 7: Calculating Profit Margin (Japan)

Jenelie runs a small online shop selling custom bento boxes. In one month, she had sales (Revenue) of ¥150,000. Her costs for materials and shipping (Expenses) were ¥90,000. What was her profit margin?

Answer and Explanation:

This is a multi-step problem to find the profit margin percentage.

1. **Step 1 (Subtraction):** Calculate the profit.
 - **Calculation:** $¥150,000$ (Revenue) - $¥90,000$ (Expenses) = $¥60,000$ (Profit)
2. **Step 2 (Division):** Divide the profit by the revenue.
 - **Calculation:** $¥60,000 \div ¥150,000 = 0.4$
3. **Step 3 (Multiplication):** Convert the decimal to a percentage.
 - **Calculation:** $0.4 \times 100 = 40\%$

Her profit margin was 40%. This means for every yen she earned, 40% of it was profit.

Question 8: Splitting a Bill Evenly (Philippines)

Cris and 4 of her friends (5 people total) have dinner. They order 3 plates of crispy pata at P800 each and a round of drinks totaling P500. If they split the bill evenly, how much does each person have to pay?

Answer and Explanation:

This requires multiplication, addition, and finally division.

1. **Step 1 (Multiplication):** Calculate the total cost of the food.
 - **Calculation:** 3 (plates) \times $P800 = P2,400$
2. **Step 2 (Addition):** Calculate the total bill.
 - **Calculation:** $P2,400$ (food) + $P500$ (drinks) = $P2,900$
3. **Step 3 (Division):** Divide the total bill by the number of people.
 - **Calculation:** $P2,900 \div 5$ (people) = **P580 per person**

Each person needs to pay P580.

Question 9: Calculating Total Revenue and Profit (America)

Patricia sells 10 sets of her custom press-on nails for \$35 each. The total cost to create all 10 sets was \$80. What was her total revenue and her total profit?

Answer and Explanation:

First, calculate total revenue, then subtract the total cost to find the profit.

1. **Step 1 (Multiplication):** Calculate total revenue.
 - **Calculation:** $10 \text{ (sets)} \times \$35 = \$350 \text{ (Total Revenue)}$
2. **Step 2 (Subtraction):** Calculate total profit.
 - **Calculation:** $\$350 \text{ (Revenue)} - \$80 \text{ (Costs)} = \$270 \text{ (Total Profit)}$

Her total revenue was \$350 and her total profit was \$270.

Question 10: Payroll Calculation with Overtime (Japan)

An employee in Japan has a normal hourly wage of ¥2,000. The overtime rate is 1.25 times the normal rate. This week, the employee worked 40 normal hours and 5 overtime hours. What is the employee's total gross pay for the week?

Answer and Explanation:

This requires calculating normal pay, overtime pay, and then adding them together.

1. **Step 1 (Multiplication):** Calculate the overtime hourly rate.
 - **Calculation:** $¥2,000 \times 1.25 = ¥2,500 \text{ (Overtime Rate)}$
2. **Step 2 (Multiplication):** Calculate the total pay for normal hours.
 - **Calculation:** $40 \text{ (hours)} \times ¥2,000 = ¥80,000$
3. **Step 3 (Multiplication):** Calculate the total pay for overtime hours.
 - **Calculation:** $5 \text{ (hours)} \times ¥2,500 = ¥12,500$
4. **Step 4 (Addition):** Calculate the total gross pay.
 - **Calculation:** $¥80,000 \text{ (normal)} + ¥12,500 \text{ (overtime)} = \textbf{¥92,500}$

The employee's total gross pay for the week is ¥92,500.