Problem Solving: Multiple-Step Problems

Some word problems have hidden questions that must be answered before you can solve the problem.

A paved trail is 8 miles long. Rita runs \( \frac{3}{4} \) of the length of the trail and walks the rest of the way. How many miles of the trail does Rita walk?

**What do you know?**
- Rita runs \( \frac{3}{4} \) of an 8-mile trail.

**What are you asked to find?**
- How many miles of the trail that Rita walks.

**How can you find the distance that Rita walks?**
- Subtract the distance Rita ran from the length of the trail.

**What is the hidden question?**
- The hidden question will help you find data you need to solve the problem.

Use the data to solve: 8 - 3 = 5, so Rita walked 5 of the 8 miles.

Write and answer the hidden question(s) in each problem. Then solve the problem.

1. April surfed for \( \frac{1}{3} \) of the 6 hours she was at the beach. She spent the rest of the time building a sand castle. How many hours did she spend building the castle?

   **Hidden question:**
   - How many hours did she spend building the castle?

   **Solution:**
   - Calculate the hours spent building the castle.

2. Bill put gasoline in 2 of his 5-gallon cans and 4 of his 2-gallon cans. He filled all the cans to the exact capacity. How many gallons of gasoline did he buy?

   **Hidden question 1:**
   - How many gallons of gasoline did he buy?

   **Hidden question 2:**
   - How many gallons of gasoline did he put in the cans?

   **Solution:**
   - Calculate the total gallons of gasoline.

3. It costs Le Stor $20 to buy a shirt. The store sells the shirt for \( 2 \frac{1}{2} \) times its cost. What is the profit for 100 of these shirts? Hint: Profit equals sales minus cost.

   **Hidden question 1:**
   - What is the profit for 100 of these shirts?

   **Hidden question 2:**
   - How much does the store sell the shirts for?

   **Solution:**
   - Calculate the profit for 100 shirts.
Name ____________________________

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Write and answer the hidden question(s) in each problem. Then solve the problem.

1. Tiwa spent $1\frac{1}{2}$ hours setting up her computer. It took her 3 times as long to install the software. How long did it take Tiwa to set up the computer and install software?

Hidden question(s): ________________________________________________________________

Solution: ________________________________________________________________

2. Lon bought 40 ounces of sliced ham. He used $\frac{3}{4}$ of the ham to make sandwiches for his friends and $\frac{1}{5}$ of the ham in an omelet. How many ounces of ham were left?

Hidden question(s): ________________________________________________________________

Solution: ________________________________________________________________

3. Lionel cut off $\frac{1}{6}$ of a 48-inch piece of rope. Marsha cut off $\frac{1}{4}$ of a 36-inch piece of rope. They compared their cut pieces. Whose piece is longer? How much longer?

Hidden question(s): ________________________________________________________________

Solution: ________________________________________________________________

4. Melanie bought 3 CDs. The country music CD cost $15. The rock music CD cost $\frac{2}{3}$ as much as the country music CD. The platinum edition CD cost twice as much as the rock CD. What was the cost of the three CDs?

Hidden question(s): ________________________________________________________________

Solution: ________________________________________________________________

5. Writing to Explain  Choose one of the problems above. Explain how you determined the hidden question and why it was necessary to answer that question in order to solve the problem.

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