**Multi-Step Word Problems**

**Warm Up:**

**Translating Symbols into Words**

|  |  |
| --- | --- |
| + | - |
| ÷ | x |

**Directions:** Translate the following into algebraic expressions. Use “x” as the unknown variable.

1. Fourteen divided by a number
2. Seven times a number
3. 10 less than a number
4. 12 more than a number
5. 4 times a number plus 5 times the same number
6. The sum of 6 and a number divided by 10
7. 20 decreased by 4 times a number
8. One-half the product of 8 and a number

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**Solving Multi-Step Word Problems**

What do I need to find? What don’t I know? (Variable)

What do I know? (Brain dump)

How do I find it? How do I use what I know?

Did I find what I was looking for?

Does it make sense? Could that happen for real?

**Step 1:** Read the problem

**Step 2:** Underline or highlight the question

**Step 3:** Define the variable

**Step 4:** Reread the problem and write the equation

**Step 5:** Solve!

**One Unknown (easy):** Jennifer has $25.00. She needs $49.00 to buy a new school outfit. How much more money does she need?

**One Unknown (difficult):** Martha takes her niece and nephew to a concert. She buys T-shirts and bumper stickers for them. The bumper stickers cost $1 each. Martha’s niece wants 1 shirt and 4 bumper stickers, and her nephew wants 2 shirts but no bumper stickers. If Martha’s total is $67, what is the cost of one shirt?

**Age (easy):** Sammy’s mother is 2 years more than 3 times as old as Sammy. Their combined age is 42. How old are Sammy’s mother and Sammy?

**Age (difficult):** Sam’s brother is 7 years older than Sam. His mother is 4 less than 3 times Sam’s age. Their combined age is 63. How old is Sam, his brother, and his mother?

**Initial Amount/Service Charge:** Online concert tickets cost $37 each, plus a service charge of $8.50 per ticket. The website also charges a transaction fee of $14.99 for the purchase. You paid $242.49. How many tickets did you buy?

**Initial Amount/Service Charge:** You work for 4 hours on Saturday and 8 hours on Sunday. You also receive a $50 bonus. You earn $164. How much did you earn per hour?

**Perimeter:** The perimeter of a rectangular garden is 46. The length is 7 less than 4 times the width. What are the dimensions of the garden?

**Consecutive Integer:** Three consecutive integers add to a sum of -96. What is the largest of the three integers?

**Consecutive Odd/Even Integer:** Four consecutive odd integers have a sum of 80. What are the four integers?

**Consecutive Odd/Even Integer (difficult):** There are three consecutive even integers such that the sum of twice the smallest, one less than the middle, and four more than the largest is -15. What are the three integers?