

1.8 Word Problems

SWBAT solve one-step word problems using algebra.

Assignments:

HW08

Translating from English to math

▶ Words for Addition

- ▶ The sum of
- ▶ Plus
- ▶ Total
- ▶ More than
- ▶ Increased by

▶ Words for Subtraction

- ▶ The difference of
- ▶ Minus
- ▶ Less than
- ▶ Decreased by

▶ Words for Multiplication

- ▶ The product of
- ▶ Times
- ▶ Of

▶ Words for Division

- ▶ The quotient of
- ▶ Divided by
- ▶ Each

▶ Equal

- ▶ Is
- ▶ The same as

Translating English to Math

► Write as an algebraic expression or equation.

1. The sum of 14 and 11
2. The difference of a number and 13
3. A number divided by 28
4. 3 times a number is 96.
5. 400 minus a number is 38.
6. The quotient of a number and 9 is $\frac{1}{3}$.
7. 8 less than a number

► Write as a verbal expression or equation.

1. $8 + x$
2. $19 - 7$
3. $34h$
4. $\frac{237}{x} = 3$
5. $x - 7 = 19$
6. $223 + 71$

Solving Word Problems Using Algebra

1. Understand the Problem
2. Devise a Plan
3. Carry out the Plan
4. Examine the Solution

The Big Picture:

These four steps will allow you to solve any problem you encounter in your life, from an algebra equation to a leaky kitchen sink.

Solving Word Problems Using Algebra

1. Understand the Problem
 1. Read the problem.
 2. Read it again. What do we know? (You might find it helpful to draw a picture)
 3. What are we looking for?
 4. Use the answer from step 3 to introduce and define variables.
2. Devise a Plan
 1. What relationships exist between the variables and the givens?
 2. Use the answer from step 1 to write an equation
3. Carry out the Plan
 1. Solve the equation
4. Examine the Solution
 1. Read the problem again to see how the solution relates to the question.
 2. Check your answer with the words of the problem, not your equation.

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3. Carry out the Plan
 1. Solve the equation
4. Examine the Solution
 1. Read the problem again.
 2. Does your solution make sense given what it says in the problem?

I give four points for word problems:

1. Define your variables
 1. What letters are you using? What do they represent?
2. Write an equation
 1. One that fits with the information from the problem
3. Solve the equation
 1. Show me the work
4. An answer that makes sense
 1. If you haven't included units (feet, inches, pounds, etc.), I will assume you mean "aardvarks" and you will be wrong.

▶ Lea bought eight toy cars for a total of \$36.99. How much did each toy car cost?

▶ Last week Joshua ran 29 miles less than Jessica. Joshua ran 7 miles. How many miles did Jessica run?

1. Daniel wants to buy a shirt for \$30.27. He gives the cashier \$40. How much change does he receive?
2. If the weight of a package is multiplied by $\frac{2}{7}$ the result is 12 pounds. Find the weight of the package.
3. How many boxes of cereal can you buy with \$26 if one box costs \$4?
4. A recipe for muffins calls for 5 cups of flour. Ryan has already put in $2\frac{1}{2}$ cups. How much more flour does he need to add?