

Enrichment



Lesson: Algebraic word problems.

Sixth Grade Objective: 5.03 Solve simple one and two step equations or inequalities

Lesson:

Word problems simply show how mathematics can be used in the real world. Your job is to translate a written problem into the language of mathematics.

A basic example of this would be:

Mary has 2 sisters. Ray has 1 sister. How many sisters do they have?

Translated into a mathematical equation would be:

- $2 + 1 =$ the number of sisters
- $3 =$ the number of sisters
- Mary and Ray have 3 sisters all together.

Using a variable (x) to represent the unknown (the number of sisters) can be a more efficient way to write and solve the problem

- $2+1 =x$
- $3=x$
- Mary and Ray have 3 sister all together.

Another, more complicated, example would be something like this:

Ray spent \$5,000 each on x number of cars. Mary spent \$10,000 each y number of cars. How much did they spend on the cars?

You do not have enough information to solve this problem, but how would you translate this problem so that you could solve it if you had more information.

To solve the problem you would multiply the number of cars Ray bought by \$5,000, add that to the number of cars Mary bought multiplied by \$10,000.

The algebraic equation would be:

$$x(5,000) + y(10,000)$$

Try these on your own:

Read and choose the correct equation

- Lou hiked 4000 meters in y hours. Robyn hiked 5,300 meters in x hours. Which equation shows how many more meters per hour Robyn traveled than Lou?
 - $(5300 \div x) - (4000 \div y)$
 - $5300x - 4000y$
 - $(5300 \div x) + (4000 \div y)$
 - $5300 + 4000xy$
- Mrs. Dotson paid \$125 for n meals on Monday. She paid \$333 for x meals on Tuesday. Which equation shows how much she paid on average for each meal?
 - $(333 - 125) / nx$
 - $(125 \div n) + (333 \div x)$
 - $(125 + 333) / n + x$
 - $125n + 333x$
- Cathy spent x dollars on candy, y dollars on postcards, and z dollars on a sweatshirt. How much more did she spend on the sweatshirt than on the candy and postcards combined?
 - $x + y + z$
 - $z - (x + y)$
 - $(z - x) + z$
 - $z(y + x)$

Check your answers.

- a
- c
- b

Quiz yourself

Read and choose the correct equation

- Robyn and Lou called their friends in Raleigh. Their cell phones did not get reception, so they had to use a pay phone. The cost was \$0.15 per minute. Robyn talked x minutes, and Lou talked y minutes. How much was the total bill?
 - $0.15(x + y)$
 - $0.15x + y$
 - $(x + y) / 0.15$
 - $x + 0.15y$

2. Mr. Jones checked into a hotel. He was exhausted from his flight. He took a nap for y hours. He watched three TV shows that were each x hours long. How much more time did he spend watching TV than sleeping?
- a) $3 + x - y$
 - b) $3xy$
 - c) $3(x - y)$
 - d) $3x - y$
3. Tyler paid \$50 for k pairs of sunglasses. He paid \$40 for m hats. How much more was a pair of sunglasses than a hat?
- a) $(50 + 40) / km$
 - b) $(50 \div k) + (40 \div m)$
 - c) $(50 \div k) - (40 \div m)$
 - d) $50k - 60m$

Check your answers!

- 1. a
- 2. d
- 3. c