

(sum)

combine $+$ more
total older
all together increase
and

(difference)

decrease $-$ younger
less

(product)

times
each \times of
by per

(quotient)

\div

"how many times"

than → read it backwards
from

Consecutive : in order

10, 11, 12

2, 4, 6, 8

Let x be- the unknown or

Lesson 1: Writing Equations Using Symbols

what everything is compared to

Classwork

Exercises

Write each of the following statements using symbolic language.

1. The sum of four consecutive even integers is -28 .

Let x be the first even integer

$$\underline{x} + \underline{x+2} + \underline{x+4} + \underline{x+6} = -28$$

2. A number is four times larger than the square of half the number.

3. Steven has some money. If he spends \$9.00, then he will have $\frac{3}{5}$ of the amount he started with.

Let X be the amount Steven starts with

$$x - 9 = \frac{3}{5}x$$

4. The sum of a number squared and three less than twice the number is 129.

Let x be "a number"

$$\underline{x^2} + \underline{2x - 3} = 129$$

5. Miriam read a book with an unknown number of pages. The first week, she read five less than $\frac{1}{3}$ of the pages. The second week, she read 171 more pages and finished the book. Write an equation that represents the total number of pages in the book.

Lesson Summary

Begin all word problems by defining your variables. State clearly what you want each symbol to represent.

Written mathematical statements can be represented as more than one correct symbolic statement.

Break complicated problems into smaller parts or try working them with simpler numbers.

Problem Set

Write each of the following statements using symbolic language.

1. Bruce bought two books. One book costs \$4.00 more than three times the other. Together, the two books cost him \$72.
2. Janet is three years older than her sister Julie. Janet's brother is eight years younger than their sister Julie. The sum of all of their ages is 55 years.
3. The sum of three consecutive integers is 1,623.
4. One number is six more than another number. The sum of their squares is 90.
5. When you add 18 to $\frac{1}{6}$ of a number, you get the number itself.
6. When a fraction of 12 is taken away from 17, what remains exceeds one-third of seventeen by six.
7. The sum of two consecutive even integers divided by four is 189.5.
8. Subtract seven more than twice a number from the square of one-third of the number to get zero.
9. The sum of three consecutive integers is 42. Let x be the middle of the three integers. Transcribe the statement accordingly.