

## Algebra Overview

ALGEBRA is \_\_\_\_\_

Compare the following:

The even numbers are 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, . . .

The even numbers are  $2n$  where  $n$  is a counting number.

Algebra uses variables in order to generalize arithmetic. Variables can be thought of as “place-holders.” In second grade, variables look like boxes (see below). In seventh grade, variables look like letters, but they have the same purpose.

$$3 + \square = 8$$

$$3 + x = 8$$

In word problems, a variable is often expressed as “a number” or “the number” or “some number.” Translate the following into from a verbal expressing into an algebraic expression:

- 1) Three plus what number is eight
- 2) One more than the double of a number is eleven
- 3) Half the sum of two numbers is ten
- 4) The difference of five and a number
- 5) Five subtracted from a number

Try to translate “the sum of ten and four divided by a number.”

What is the value the following:

$$2 + 3 \times 5$$

What is at issue in the problem above?