1.4 Write Equations and Inequalities
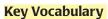
Before	You translated verbal phrases into expressions.
Now	You will translate verbal sentences into equations or inequalities.
Why	So you can calculate team competition statistics, as in Ex. 41.

Key Vocabulary
- open sentence
- equation
- inequality
- solution of an equation
- solution of an inequality

An **open sentence** is a mathematical statement that contains two algebraic expressions and a symbol that compares them.

An **equation** is an open sentence that contains the symbol $=$. An **inequality** is an open sentence that contains one of the symbols $<$, $\leq$, $>$, or $\geq$.

KEY CONCEPT *For Your Notebook*

Symbol	Meaning	Associated Words
$=$	is equal to	the same as
$<$	is less than	fewer than
$\leq$	is less than or equal to	at most, no more than
$>$	is greater than	more than
$\geq$	is greater than or equal to	at least, no less than

COMBINING INEQUALITIES Sometimes two inequalities are combined. For example, the inequalities $x > 4$ and $x < 9$ can be combined to form the inequality $4 < x < 9$, which is read "x is greater than 4 and less than 9."

EXAMPLE 1 **Write equations and inequalities**

Verbal Sentence	Equation or Inequality
a. The difference of twice a number k and 8 is 12.	$2k - 8 = 12$
b. The product of 6 and a number n is at least 24.	$6n \geq 24$
c. A number y is no less than 5 and no more than 13.	$5 \leq y \leq 13$

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✓ **GUIDED PRACTICE** for Example 1

1. Write an equation or an inequality: The quotient of a number p and 12 is at least 30.