

1-5 Notes: *Equations*

Solve Equations

- A mathematical statement that contains algebraic expressions and symbols is called an **open sentence**.
- Open sentences that contains an equal sign, =, are called **equations**.
- The set of numbers from which replacements for a variable may be chosen is called the **replacement set**.
- Each value that can be used in an equation to replace a variable r is called an **element** of the replacement set.
- The set of all replacements for the variable that result in true statements is called the **solution set** for the variable.
Equations are not necessarily true statements for all values of the replacement set.
- When listing elements of a set of numbers such as replacement sets or solution sets mathematicians use braces $\{ \}$.

Example 1: Find the solution set of $3a + 12 = 39$ if the replacement set is $\{6, 7, 8, 9, 10\}$.

Example 2: Solve $\frac{2(3 + 1)}{3(7 - 4)} = b$.

Solve Equations with Two Variables Some equations contain two variables. It is often useful to make a table of values in which you can use substitution to find the corresponding values of the second variable.

Example

MUSIC DOWNLOADS Emily belongs to an Internet music service that charges \$5.99 per month and \$0.89 per song. Write and solve an equation to find the total amount Emily spends if she downloads 10 songs this month.