5-1 Solving Inequalities

by addition and subtraction

If $3 < 10$,
is $5 < 12$??

An open sentence that contains $<$, $>$, $\leq$, or $\geq$ is called an inequality

If the same number is added to each side of a true inequality, the resulting inequality is also true.

Example 1: $h - 12 > 65$

Example 2: $22 > m - 8 = 36$

Example 3: $d - 14 \geq -19$

If the same number is subtracted to each side of a true inequality, the resulting inequality is also true.

Example 1: $x + 23 < 14$

Example 2: $p + 8 \leq -18$

The solution set of an inequality can be presented in several ways:

1. algebraically

2. set builder notation

3. graph

5-2 Solving Inequalities

by multiplication and division

If $3 < 10$,
and both sides are multiplied by a number
will the inequality remain true?

Example:
Solve: $3d > 6$

Example:
Solve $-3d > 6$

Example: Solve

$$\frac{1}{4}y \geq 12$$