Vocabulary: Compound Inequalities



**Vocabulary**

* Boundary point - a point separating the solution of an inequality from points not in the solution.
* The graph of *x* ≤ 4, shown to the right, has a boundary point at 4.
* Compound inequality – a combination of more than one inequality.
* Compound inequalities contain *and* or *or*.
* Inequality – a statement that compares two quantities or expressions that are not equal.
* A *strict inequality* uses one of the following symbols: < (less than),
> (greater than), or ≠ (not equal to).
	+ Examples of strict inequalities are *x* > 2, and *x* + 1 < 5.
* Inequalities that are not strict use the symbols ≤ (less than or equal to) or
≥ (greater than or equal to).
	+ Examples of inequalities that are not strict are *x* ≤ 6, and 2*x* ≥ 4.
		- * Intersection (of sets) – the set of elements that are the same in different sets.
* Compound inequalities containing *and* are intersections.
* For example, the solution of *x* > 3 and *x* < 5 is 3 < *x* < 5, the set of all numbers that satisfy both inequalities.
* The symbol “∩” is commonly used to indicate the intersection of sets.
	+ - * Union (of sets) – the set of all elements contained in different sets.
	+ Compound inequalities containing *or* are unions.
* For example, the solution of *x* > 3 or *x* < 5 is the set of all numbers that satisfy either inequality (or both) – in other words, the set of all real numbers.
	+ The symbol “U” is commonly used to indicate the union of sets.
* Solution – a value that makes an equation or inequality true.
	+ For example, 3 is a solution of the inequality 2*x* ≤ 8 because 2(3) ≤ 8.