

Section 5-1: Inequalities and Compound Sentences

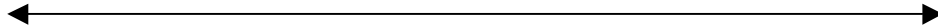
Warm-up: Refer to the postal regulations listed on page 271.

1. Find the volume of the smallest postcard that can be mailed for \$.20.
2. Find the volume of the largest postcard that can be mailed for \$.20.
3. Use the answers from the two questions above. Find the approximate ratio of the largest volume to the smallest volume.

Inequality:

Compound Sentence:

Example 1: As of 1994, recorded temperatures in the state of Michigan have ranged from a low of $-51^{\circ}F$ in Vanderbilt (1934) to $112^{\circ}F$ in Mio (1936). Graph the range of recorded temperatures T .



Intersection:

Union:

Example 2: People from age 16 to 65 can give blood at a blood bank.

a. Write a compound inequality to describe the possible ages A at which blood can be given.

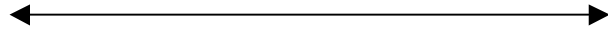
b. Graph the inequality on a number line.



Properties of Inequality (3 parts)

- **Addition Property of Inequality**
- **Multiplication Properties of Inequality**

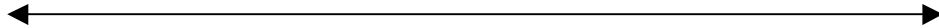
Example 3: Solve $3x - 4 \leq 26$ and graph the solution set.



***When multiplying or dividing by a negative,

Example 4: An airplane flying at 34,000 feet descends at the rate of 2500 feet per minute. After how many minutes will the plane be below 20,000 feet?

Example 5: Graph $\{x : x < 3 \cup x \geq \pi\}$.



Homework:

“To accomplish our destiny it is not enough to merely guard prudently against road accidents. We must also cover before nightfall the distance assigned to each of us.” - Alexis Carrel