

# Algebra I

## Notes Section 5.1

### Solve Inequalities Using Addition and Subtraction

#### Big Ideas

1. How to solve the inequality by adding or subtracting the same number from each side of the inequality.
2. How to graph the inequality with an open or closed circle and shade the number line in the appropriate direction.

#### Graphs of Inequalities

- I.  $x < 3$  
- II.  $x > -4$  
- III.  $x \leq -5$  
- IV.  $x \geq 6$  

**EXAMPLE 1** The highest temperature recorded in the US was 134°F at Death Valley, California, in 1913. Use only this fact to write and graph an inequality that describes the temperatures in the U.S.



**EXAMPLE 2** Write an inequality represented by the graph.



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**EXAMPLE 3** Solve and graph your solution.

a)  $x - 5 > -3.5$



b)  $p - 9.2 < -5$



c)  $-1 \geq m - 1/2$

**EXAMPLE 4** Solve and graph your solution.

a)  $9 \geq x + 7$



b)  $-17 \leq x - 14$



**EXAMPLE 5** You are checking a bag at an airport. Bags can weigh no more than 50 pounds. Your bag weighs 16.8 pounds. Find the possible weights  $s$  (in pounds) that you can add to the bag.