

Notes - Introduction to Inequalities

Represent the following inequalities graphically.

- is used when the number is included in the solution set
- is used when the number is not included in the solution set

1)  $x > 9$



2)  $y \leq 5$



3)  $z \geq -3$



4)  $m < -10$



Write the following using an inequality and then represent the inequality on the graph.

1) all numbers less than or equal to negative six



2) all numbers greater than fourteen



3) all numbers less than negative three



4) all numbers greater than or equal to zero



State whether the given number is in the solution set of each inequality below.

1) 3;  $x > -18$

2) 30;  $x \geq 30$

3) 22;  $x \leq 12$

4) -4;  $x < -4$

5) 0;  $x > -9$

6) -100;  $x \leq -1$

Represent each of the following using an inequality. Then, graph the inequality.

1) In New York State, the law states that a person must be at least 16 years old to drive a vehicle.



2) In the United States, the law states that a person must be 18 or older to vote.



3) You only have \$15 to spend on your friend's birthday gift.



4) Students are required to stay home from school if their temperature is above  $102^\circ$ .



5) If your suitcase weights more than 50 pounds you need to pay extra.



6) You must be at least 58 inches tall to ride the roller coaster.

