Algebra/Geometry Summer 2006

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Grade 8th
Greenville, MS
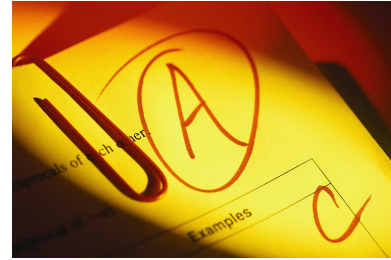
1. Teaching Objectives

Students will be able to solve and graph inequalities.

2. Instructional Activities

Teacher will introduce the lesson by reviewing the definition of an equation. An equation is mathematical sentence with an equal sign. Next the teacher will solve four equations and check the solutions. This will be a review: n- 7 = 10, 8t = 56, x + 10 = 17, and $\frac{m}{8}$ = -15.

Next the teacher will give the students the definition for an inequality. An inequality is a comparison of two expressions.   The teacher will then write and solve four inequalities: (1) d + 5 < 9 (2)   m – 3 > 8 (3) 7p > 49   (4) $\frac{d}{8}$ < 20

The teacher will point out to the students that the symbols will reverse when multiplying or dividing with negative integers. To explain, the teacher will tell the students that the relationship between the inequalities will reverse when multiplying or dividing integers.

Example, -3a < 12
            a > -4
To further explain, the teacher will show an example of a true and false inequality: -2 > - 3 this statement is true. However, when you multiply this problem:
-2(-2) > -2(-3) is a false statement. This is why the symbols must reverse.

Now the teacher will show students all the symbols they will be using as well as how to draw the number line. See attachment # 1. The teacher will assign students four problems to solve on their own. See attachment # 2 When the teacher feels that all students have a clear understanding, students will complete activities. See attachment # 3

3. Materials and Resources

Students will need: notebook, paper, and pencils

Teacher will need: Overhead, transparencies, activity pages.

Assessment

Teacher will observe students work and ask questions. Problems will be graded with a mastery of 70%.

Solving Inequalities   Attachment # 3

Directions: Below you will find your name next to an inequality problem or the solution to an inequality problem.

Step # 1. Find your name. If your name has a problem beside it when called on, come to the board and solve the inequality.

Step # 2. If your name has a solution beside it when you see the solution, come to the board and graph the solution.

Names	**Problems/Solutions**
Tanya	$n - 3 > 8$
Roy Lee	$4 + f > -7$
Juan	$-5\ 1/2 > z - 3$
Sara	$950 + n < 2$
Tim	$25 > b - 18$
Diana	$m + 4 < -2$
John	$m + \frac{1}{2} > 3$
Terry	$4.5 > n + 6$
Anna	$y + 78 > 54$
Maria	$n > 11$
Sam	$z < -2$
Lynnette	$b < 7$
Sonya	$n < -948$

Symbols Used In Graphing Inequalities   Attachment # 1

Number Line


```
 -5   -4   -3   -2   -1   0   1   2   3   4   5
```

Closed and Open circles

●   ○

Less Than   and   Greater Than

<   >

Less Than or Equal   Greater Than or Equal

≤   ≥

Solve the following Inequalities and graph. (Show all your work)

1. $7p > 49$

2. $\dfrac{n}{-2} < 11$

3. $n - 3 > 8$

4. $m + \dfrac{1}{2} < 3$