

Algebra/Geometry Institute Summer 2004

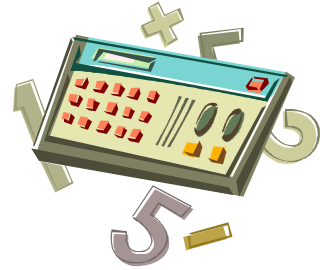
Lesson Plan Three

Faculty Name: Sandra Kay Wilson

School: East Side High

City: Cleveland

Grade Level: 9th



- 1 Teaching objective(s)
The student will solve linear inequalities in one variable.

2 Instructional Activities

1. Give students graphs of equations and inequalities along with the equations and inequalities and have them point out similarities and differences.
2. Based on the differences and similarities pointed out, generate the definition of a linear inequality in one variable: a statement containing an inequality sign whose answer shows direction and boundary.

2. Using the steps for solving a linear equation, demonstrate solving the following inequalities.

Solve and graph the following.

$$n + 7 < 12$$

$$a - 16 \geq 23$$

$$3(a + 6) > 4(a + 6)$$

$$4x + 2 \leq -8x + 10$$

$$j - 12 < 3j + 9$$

3. Allow students to work together to solve and graph the following.

$$3x + 30 > 5(x + 4)$$

$$-5x \geq 60$$

$$2a - 13.5 < -17$$

$$8a + 5 \geq 9a + 23$$

Activity 1: "Guess My Number"

The following is an adaptation of a game featured in Mathematics Teaching In The Middle School.

Students will be given riddles to solve. Each riddle will have three to four clues. Students are to solve the inequalities, answer the riddle and present an

an answer.

Riddle #1:

X is an integer.

$$3x + 2 > 6$$

and

$$-x + 3 > 0$$

Riddle #2

X is an integer.

$$2x + 5 < x$$

and

$$-3x > 21$$

Riddle # 3

X is an integer.

$$14(x + 3) < 10(x + 1)$$

and

$$3(x + 1) > -27$$

Riddle #4

X is rational number.

$$6x \leq 3$$

and

$$8x \geq 4$$

Riddle # 5

X is an integer.

X is between 5 and 10

The product of 5 and my integer is not divisible by 10.

and

The product of 5 and my integer has less than five factors.

3 **Materials and Resources**

Chalkboard/Overhead

Riddles

Mathematics Teaching in the Middle School, Margaret W. Tent, Volume 5, No.5,
January 2000, pages 292-295.

4 **Assessment**

Teacher observation

Oral Responses

Homework: Solve and Graph.

$$2n + 7 > 18$$

$$-n + 30 < 8n + -6$$

$$3(2c + 8) \geq 10c - 12$$

$$7p < 63$$

$$13a + 7 > 33$$

Work Sampling (Quiz): Solve and Graph.

1. $j + 4 < -20$

2. $3p + 18 > 10$

3. $-5z + 4 \leq 12 - 4z$

4. $2(a + 1) < 16$

5. $7v - 21 \leq -5v + 3$