

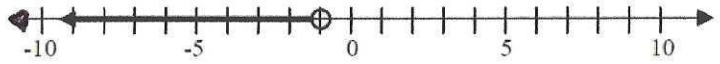
Name \_\_\_\_\_  
Mrs. Roubos

Date \_\_\_\_\_  
8A Period \_\_\_\_\_

Solving Inequalities Homework

1) Which of the following inequalities is graphed below?

- (1)  $x < 2$
- (2)  $x \leq -1$
- (3)  $x < -1$
- (4)  $x > -1$



2) Which of the following values of  $x$  is *not* in the solution set graphed below?

- (1) -5
- (2) -6
- (3) 0
- (4) 4



3) Which of the following represents the solution set of the inequality  $4x + 6 \leq 26$ ?

- (1)  $x \leq 5$
- (2)  $x \leq 8$
- (3)  $x \geq 5$
- (4)  $x \geq 8$

4) Which of the following represents the solution set of the inequality  $-3x + 6 < 27$ ?

- (1)  $x < -7$
- (2)  $x \leq -7$
- (3)  $x > 7$
- (4)  $x > -7$

5) Which of the following is the solution set of the inequality  $10 \leq 4x - 14$ ?

- (1)  $x \leq 6$
- (2)  $x \geq 6$
- (3)  $x \geq -1$
- (4)  $x < -1$

6) What is the solution set of the inequality :  $4t + 2 < 8t - (6t - 10)$

- a)  $\{t | t < -6.5\}$       b)  $\{t | t > -6.5\}$   
 c)  $\{t | t < 4\}$       d)  $\{t | t > 4\}$

Solve the following inequalities & graph your solution. Also, list the properties you used and write your answer in set-builder & interval notation too!

7)  $1 - 5x > 36$

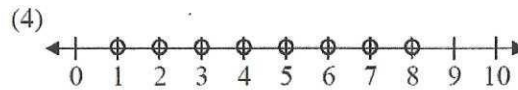
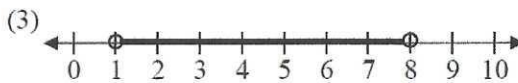
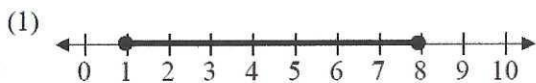
8)  $2(4x + 3) < 10(x - 2)$

9)  $0.15x + 50 \geq 0.20x + 35$

10) Translate the following verbal sentence into an algebraic inequality

"Four times a number decreased by 15 is less than six more than the same number"

11) Felicia's Ice Cream Shoppe offers a maximum of eight scoops of ice cream on a single cone. They serve only whole scoops (a customer may not order 2 and a half scoops for example). If a customer just ordered an ice cream cone, which of the following solutions represents the number of scoops the customer may have ordered? Explain.



*\*Challenge\**

A) Which of the following inequalities has all real numbers as its solution set?

- (1)  $3x + 2 > 2x + 7$       (3)  $4x + 8 \leq 4x + 16$   
 (2)  $7x + 3 > 7x + 10$       (4)  $5x - 4 > 2x + 3$

B) Which of the following inequalities has no values in its solution set (it's empty)?

- (1)  $6x + 2 > 6x - 1$       (3)  $8x + 7 < 3x + 9$   
 (2)  $4x + 8 \geq 4x + 8$       (4)  $2x + 6 < 2x - 10$