Solving Multi-Step Inequalities

agenda

- Warm-Up
- Notes
- Homework: Practice

reminders:

- Test Corrections due FRIDAY (tutoring times)
- Test over ALL Unit 1 next Tuesday
- Six weeks ends next THURSDAY!

objective:

You will solve inequalities with multiple steps.

warm-up

1. Round the following to the nearest hundredth.

167.4469346

167.45

2. Translate the following sentence into an algebraic equation. Then solve.

5 less than a number is the same as the opposite of twice the quantity of 3 minus the same number

n

parenthesis

$x - 5 = -2(3 - x)$

$x - 5 = -6 + 2x$

$+5 \quad +5$

$x = -1 + 2x$

$-2x \quad -2x$

$-1x = +1$

$-1 \quad +1$

$x = 1$

Remaining Tutoring:

Mon 4:15 PM	Tues 8:15 AM Tues 4:15 PM	Wed 4:15 PM		Fri 8:15 AM

Quiz Averages:

2nd - 71

3rd - 61

4th - 57

5th - 65

7th - 54

- Test 1 corrections due by FRIDAY 9AM
- Test over ALL Unit 1 is next Tuesday 10/1
- Six weeks ends Thursday 10/3

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Student Notes - Solving Multi-Step Inequalities **pp 188-190**

Solve the following inequalities. Graph each solution on the number lines provided. Remember to check your work.

1. $2x + 11 \le 19$

$-11 \quad -11$

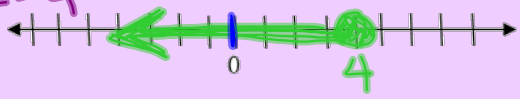
$\frac{2x}{2} \le \frac{8}{2}$

$x \le 4$

$2 \cdot 0 + 11 \le 19$

$11 \le 19$ ✓

3 – –4



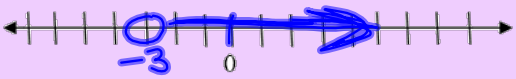
2. $2 - 3x < 7$

$+2 \quad +2$

$\frac{-3x}{-3} < \frac{9}{-3}$

FLIP IT

$x > -3$



3. Five less than twice a number is at most the sum of five times the same number and four.

$2x - 5 \le 5x + 4$

$-2x \quad -2x$

$-5 \le 3x + 4$

$-4 \quad -4$

$\frac{-9}{3} \le \frac{3x}{3}$

$\boxed{-3 \le x}$

4. $6m - (2m + 3) > 13$

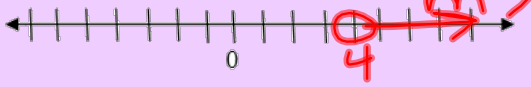
$6m - 2m - 3 > 13$

$4m - 3 > 13$

$+3 \quad +3$

$\frac{4m}{4} > \frac{16}{4}$

$m > 4$



5. Five less than three fourths of a number is greater than 4.

$\frac{3}{4}x - 5 > 4$

$+5 \quad +5$

.75

$\frac{3}{4}x > 9$

$x > 12$

6. $\frac{-2x - 7}{5} \ge 9 \quad \cdot 5$

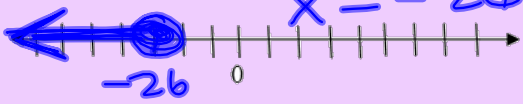
$-2x - 7 \ge 45$

$+7 \quad +7$

FLIP IT

$\frac{-2x}{-2} \ge \frac{52}{-2}$

$x \le -26$



Set up the following:

7. Celia has at most $30 to spend at a carnival. Admission costs $5.00, lunch will cost $6, and each ride ticket costs $1.25. Which inequality represents the number of ride tickets x that Celia can buy?

A $30 + (5 - 6) + 1.25x \le 30$

B $5 + 6 + 1.25x \le 30$

C $30 - (5 + 6) \le 1.25x$

D $30 + 1.25x \le 5 + 6$

$5 + 6 + 1.25x \le 30$

Exit Ticket

Diane wants to buy some new clothes for school. The shirts cost $24 and the pants cost $40. Which inequality best represents the number of shirts, s, and pants, p, that Diane can buy with no more than $175?

Write your name and the answer to the following question on a sticky note.

A $24p + 40s < 175$

B $24s + 40p > 175$

C $24s + 40p \leq 175$

D $24s + 40p \geq 175$

Algebra I - Unit 1: Topic 2 – Solving Multi-Step Inequalities

Practice - Solving Multi-Step Inequalities **pp 188-190**

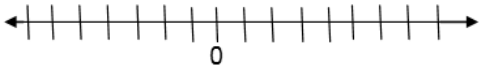
Name_____ Date_____Per_____

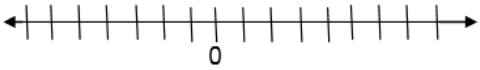
Solve the following inequalities. Graph each answer on the number line provided. Remember to check your work.

1. $-11 - 9x > -47$

2. $7 - 5 < 9$

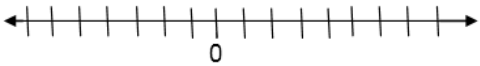
#1-4 PICK 2

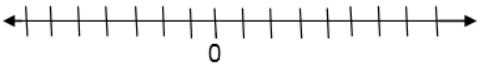




3. $10c + 11 < 5 + 8c$

4. $4n - 6 \geq 6n - 20$





Solve each inequality and check your answer.

5. $5p - (p - 6) \leq 0$

6. $5 > \frac{m}{3} - 2$

#5-8 PICK 2

7. $\frac{t+3}{2} < -8$

8. $\frac{5e}{6} + 7 > -3$

Algebra I - Unit 1: Topic 2 – Solving Multi-Step Inequalities

Solve each inequality and check your answer.

9. $-3-\frac{k}{5}\geq -10$

10. $\frac{-3x-1}{5}<4$

Defin able, write an inequality lve each problem. Then check your so

11. Two f a number decreased by east 9.

12. Twice the number and three st six times the same number less ten.

13. The sum of a nd 84 is grea the product of -3 and the same number.

14. Carol is buying asparagus and bananas at the grocery store. Asparagus costs $3.00 per pound and bananas cost $0.50 per pound. Which inequality best represents the number of pounds of asparagus, a, and bananas, b that Carol can purchase with at most $20.00.

A $3a+0.5b<20$

B $3a+0.5b>20$

C $3a+0.5b\leq 20$

D $3a+0.5b\geq 20$

15. Solve the following inequality: $-3(4-m)\geq 2(4m-14)$

16. The county water department charges a monthly administrative fee of $10.40 plus $0.0059 for each gallon of water used. Glen's family always pays more than $35 each month for water. Which inequality best represents the number of gallons of water, *g*, Glen's family uses each month?

A $10.4g + 0.0059 > 35$

B $10.4g - 0.0059 < 35$

C $0.0059g + 10.4 > 35$

D $0.0059g - 10.4 < 35$