Solving Inequalities Day 2

Agenda

Warm-Up

HW Check

Stations

HW: #1-9

Reminder

HW 1.2 due tmr!

Essential Question

What steps do I take to solve inequalities?

Warm-Up Thursday

Write an inequality and solve

Twice a number is no more than 76.

$$\frac{2 \cdot x}{2} \leq \frac{76}{2}$$

$$x \leq 38$$

Algebra I - Unit 1 – Solving Multi Step Inequalities

Practice - Solving Multi Step Inequalities

Name _____ Date _____ Per _____

EVENS!!!!

Solve each inequality and check your answer. Be sure to show all work

1. $3x \le 5x + 8$

2. $-3r < 10 - r$

3. $4x > 3(7 - x)$

4. $-4(3 - p) \ge 5(p + 1)$

5. $2(x - 2) \le -2(1 - x)$

6. $-5(k - 1) \ge 5(2 - k)$

7. $-7x - 10 + 5x \le 3(x + 4) + 8$

8. $-2(x - 7) - 4 - x < 8x + 32$

$-2x + 14 - 4 - x < 8x + 32$

$-3x + 10 < 8x + 32$

$+3x \quad +3x$

$10 < 11x + 32$

$-32 \quad -32$

$-22 < 11x$

$\frac{-22}{11} < \frac{11x}{11}$

$-2 < x$

9. Write and solve an inequality to find the sales Mrs. Jones needs if she earns a monthly salary of $2000 plus a 10% commission on her sales. Her goal is to make at least $3000 per month. What sales does she need to meet her goal?

10. Edgar and Raul are playing video games. Edgar's score is 180 and he scores 5 points per second. Raul's score is 100 and he scores 8 points per second. How long will it be before Raul takes the lead?

Raul > Edgar

$100 + 8x > 180 + 5x$

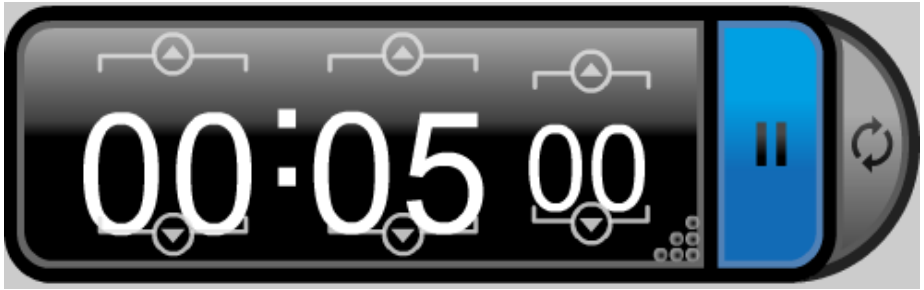
$x > 26.6$

11. The measure of an angle is no more than one-fourth its supplement. Find the maximum measure of the smaller angle.

Solving Inequalities Day 2

Stations

Work each station on the recording sheet. When the timer goes off, your team will move to the next station, numerically. Station #7 will go to #1!



If you finish a station early, you may begin to work on your HW. BUT: your stations are due at the end of the period!!

Algebra I Unit 1 Solving Multi Step Inequalities Day 2

Station 1

1. You want to make a rectangular banner that is 18 ft long. You have no more than 48 ft of trim for the banner. Find the inequality that represents this problem. Then find the possible widths of the banner.

a. $2x + 36 \leq 48$
b. $x + 18 \leq 48$
c. $2x + 36 \geq 48$
d. $x + 18 \geq 48$

Give 2 possible widths of the banner.

Algebra I Unit 1 Solving Multi Step Inequalities Day 2

Station 2

2. Your cell phone plan costs $39.99 per month plus $0.15 for each text message you send or receive. You have at most $45 to spend on your cellphone bill. Find the inequality that represents this problem. Then find the maximum number of text messages you can send and/or receive.

a. $39.99x + 0.15x \leq 45$

b. $39.99 + 0.15x \leq 45$

c. $39.99x + 0.15x \geq 45$

d. $39.99 + 0.15x \geq 45$

Then find the maximum number of text messages you can send and/or receive.

Algebra I Unit 1 Solving Multi Step Inequalities Day 2

Station 3

3.Solve the inequality below.

$$2x < -\frac{2}{3}(4x + 4)$$

a. $x < -\frac{4}{7}$

b. $x < -\frac{12}{7}$

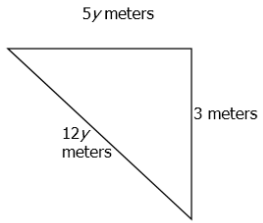
c. $x > -\frac{4}{7}$

d. $x > -\frac{12}{7}$

Algebra I Unit 1 Solving Multi Step Inequalities Day 2

Station 4

4. Find the inequality that represents this problem. Then determine the value of y so that the area of the triangle below is less than 75 meters.



Algebra I Unit 1 Solving Multi Step Inequalities Day 2

Station 5

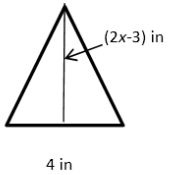
5.Solve the inequality below.

$$-5-3x \geq 2(10+2x)+3$$

Algebra I Unit 1 Solving Multi Step Inequalities Day 2

Station 6

6. The area of the triangle shown below is less than 10 square inches. Find the inequality that represents this problem.



a. $8x-12<10$
b. $4x-6<10$
c. $8x-12>10$
d. $4x-6>10$

Then find the maximum height of the triangle.

Algebra I Unit 1 Solving Multi Step Inequalities Day 2

Station 7

7. A crane cable can support a maximum load of 15,000 kg. If a bucket has a mass of 2,000 kg and pea gravel has a mass of 1,500 kg for every cubic meter, which equation represents how many cubic meters of pea gravel, *g*, can be safely lifted by the crane?

a. $1500x + 2000 \leq 15000$
b. $1500x + 2000 \geq 15000$
c. $3500x \leq 15000$
d. $3500x \geq 15000$

HW: ALL! 1.2 due tmr!

Algebra I - Unit 1 – Solving Multi Step Inequalities Day 2

Practice - Solving Multi Step Inequalities Day 2

Name _____ Date _____ Per _____

Solve each inequality and check your answer. Be sure to show all work

1. $6(x+4)-(x+3) \geq x-1$

2. $0 < 4(6-x)+7x$

3. $6-\frac{5}{2}x \geq 26$

4. $12-4(x-5) < 8+x$

5. Which of the following inequalities is not equivalent to $23-5(x+3) \leq 18$?

   A. $23-5x-15 \leq 18$
   B. $-5x-15 \leq -5$
   C. $-5x \geq 10$
   C. $x \geq -2$

6. Fernando is starting a new sales job and needs to decide which of two salary plans to choose from. For Plan A, he will earn $100/week plus 15% commission on all sales. For Plan B, he will earn $150/week plus 10% commission on all sales. For what amount of weekly sales is Plan B better than Plan A?

7. To cater a brunch, Frankie's Cafe charges a $130 setup fee plus $12.50 per person. The cost of Jackson Enterprise's annual holiday party cannot exceed $1500. If Jackson Enterprise hires Frankie's Cafe to cater their annual holiday party, how many people can they invite to the party?

8. Ice-cream stays solid at Fahrenheit temperatures below 10°. The formula $F=\frac{9}{5}C+32$ can be used to convert Celsius temperatures to Fahrenheit temperatures F. Determine in terms of an inequality those Celsius temperatures for which ice-cream stays solid.

9. For a direct-mail campaign, National Advertising determines that any envelope with a fixed width of 2.5 inches and an area of at least 18.5 square inches can be used. Determine in terms of an inequality those lengths that will satisfy the company constraints.

Solving Inequalities Day 2

1. $x \geq -22/4$

Don't forget to distribute the negative!

2. $-8 < x$

3. $x \leq -8$

4. $24/5 < x$

Don't forget to distribute the negative!

5. C

The most important word... NOT!!!

6. $1000 in sales.

$100 + 0.15x < 150 + 0.10x$

7. 109 people maximum.

8. $-12.2\,^{\circ}C$

9. 7.4 inches

$2.5*L \geq 18.5$