Solving Inequalities

Agenda

Warm-Up

Notes

HW #1-13,

Wheel Spin on Monday

Reminders

Test next Thursday!

Test 1 Corrections due Wednesday

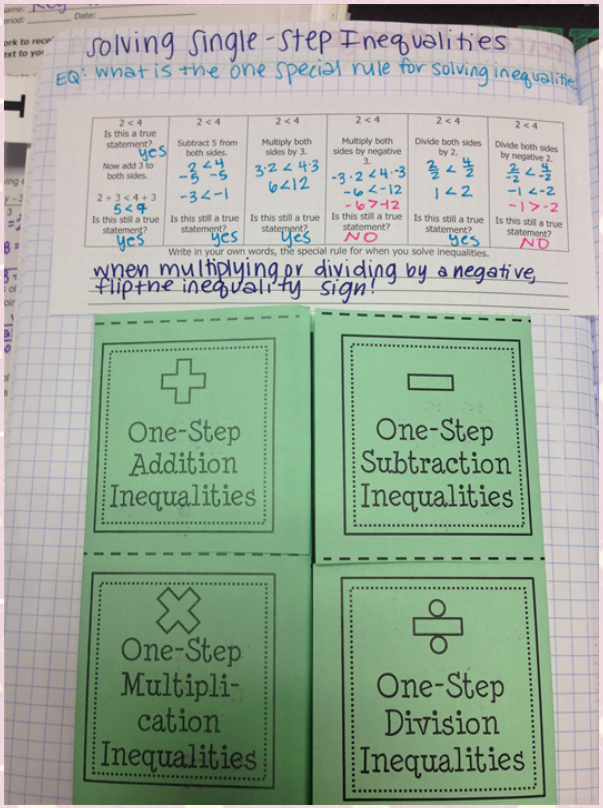
Essential Question

What is the one special rule when solving inequalities?

Warm-Up in notebook

If you have not already: turn in your signed progress report and HW 1.4.

~~Then set up p.20 in your notebook to look like the picture.~~



Solving Inequalities p.20

Essential Question What is the one special rule when solving inequalities?

< less than > greater than

$2 < 4$ Is this a true statement? yes Now add 3 to both sides. $2 + 3 < 4 + 3$ $5 < 7$ Is this still a true statement? yes	$2 < 4$ $-5 \quad -5$ Subtract 5 from both sides. $-3 < -1$ Is this still a true statement? yes	$3 \cdot 2 < 4 \cdot 3$ Multiply both sides by 3. $6 < 12$ Is this still a true statement? yes	$(-3)\ 2 < 4\ (-3)$ Multiply both sides by negative 3. $-6 < -12$ $-6 > -12$ Is this still a true statement? NO	$\frac{2}{2} < \frac{4}{2}$ Divide both sides by 2. $1 < 2$ Is this still a true statement? yes	$\frac{2}{-2} < \frac{4}{-2}$ Divide both sides by negative 2. $-1 < -2$ $-1 > -2$ Is this still a true statement? NO

Solving Inequalities p.20

Essential Question What is the one special rule when solving inequalities?

Using what we saw in the boxes, write in your own words the special rule when solving inequalities.

Whenever you divide or multiply by a negative number, flip the inequality sign.

Side Note

$$-2x = 36$$

$$\frac{-2x}{-2} = \frac{36}{-2}$$

$$x = -18$$

$=$ $\neq$

$>$ $<$

Solving Inequalities p.20

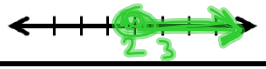
Essential Question What is the one special rule when solving inequalities?

● → line under ○ → no line

Example 1: $w + 2 \geq 4$

$-2 \quad -2$

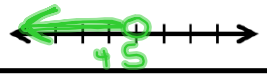
$w \geq 2$



Example 2: $3 + x < 8$

$-3 \quad -3$

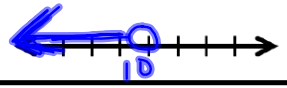
$x < 5$



Example 3: $h - 3 < 7$

$+3 \quad +3$

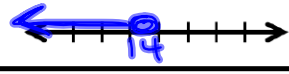
$h < 10$



Example 4: $y - 5 \leq 9$

$+5 \quad +5$

$y \leq 14$



Example 5: $\frac{4n}{4} \leq \frac{-12}{4}$

$n \leq -3$

Example 6: FLIP $\frac{-6a}{-6} > \frac{-24}{-6}$

$a < 4$

Example 7: $\frac{m}{9} < 10$ · 9

$m < 90$

Example 8: FLIP $\frac{m}{-5} < 6$ · −5

$m > -30$

Variable on left → use arrow

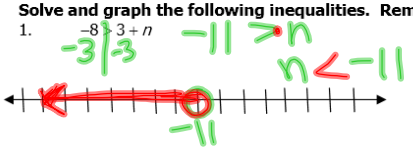
Algebra I - Unit 1: Topic 4 – Solving Inequalities **Due Monday 9/22 (Wheel Spin)**

Practice - Solving Single Step Inequalities **pp 168-170, 174-176, 180-182**

Name_____ Date_____Per_____

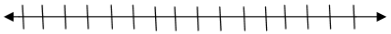
Solve and graph the following inequalities. Remember to check your work.

1. $-8 > 3 + n$

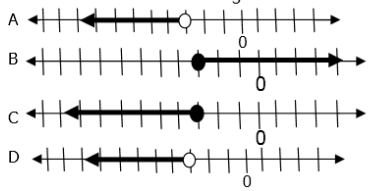


2. $-5x > -25$

3. $7 < -x$



4. Which graph shows the solution of $\frac{-2}{3}n \leq 2$?



Solve each inequality. Then check your solution.

5. $\frac{2}{3}x < -22$

6. $51 \leq x - (-49)$

7. $-3x \leq -15$

8. $-\frac{3m}{4} < \frac{2}{3}$

Define a variable, write an inequality, and solve each problem.

9. The difference of a number and four is greater than forty-two.

$x - 4 > 42$

10. Three-fourths of a number is at most -18.

$\frac{3}{4}x \leq -18$

11. A number divided by 7 is at least negative three.

$\frac{x}{7} \geq -3$

12. Negative four times a number is no less than 204.

$-4x \geq 204$

13. Claudia can spend up to $1500 on paper for her business this year. Paper costs $32 per box. Which inequality represents the number of boxes of paper p she can buy this year?

F $32p \leq 1500$
G $32p \geq 1500$
H $32 + p \geq 1500$
J $32 + p \leq 1500$

HW Check: Solving Single Step Inequalities

1. $-11 > n$
2. $x < 5$
3. $-7 > x$
4. B
5. $x < -33$
6. $2 \leq x$
7. $x \geq 5$
8. $m > -8/9$
9. $x > 46$
10. $x \leq -24$
11. $x \geq -21$
12. $x \leq -51$
13. F

Make sure you graph the answers on the appropriate number line

If you have questions please tweet or email sara.korotkow@risd.org.

Wheel spin Monday!!