Writing Inequalities

Agenda

Warm-Up - see right

HW Check

Activity: Four Corners

Notes p. 9 & 10

HW: Practice #1-9

Reminders

MathBook/Calc Form/
HW 1.1 Due Friday!

Essential Question

How do I translate words into algebraic inequalities?

Warm-Up

On your way in, you (hopefully) received a small slip of paper with a word on it. Decide if this word means addition, subtraction, multiplication, or division. Then, sit at a table with that label! Be ready to defend your choice.

HINT: some words COULD go with multiple operations!!

Questions, comments, concerns?

Algebra I - Unit 1: Topic 1 – Writing Expressions and Equations

Practice – Writing Expressions and Equations

Name _____   Date _____   Pd. _____

1. Raquel earns $150 per week at Forever 21 plus 15% commission on her total sales.

    A. Write an expression to represent Raquel's commission on x total sales.

    B. Write an equation to find her total sales if her total earnings for the last two weeks were $500.

2. Angelina rents a bounce house for a birthday party for a delivery fee of $100 plus a rental fee of $20 per hour.

    A. Write an expression for the cost of renting the bounce house for x, the number of hours.

    B. Write an equation if the total charge was $220.

3. Nate has written 4 paragraphs of an essay for his English class so far. He can write a paragraph every $\frac{2}{3}$ of an hour. Write an expression for the number of paragraphs in Nate's essay after h, hours.

4. Two angles are complementary. The larger angle is 6 more than twice the smaller angle. Write an equation to find the measure of each angle. (Hint: Draw a picture)

5. Brock is six feet tall. He climbs a ladder to paint some trim on his house. For each rung that he climbs, Brock is 1.2 feet higher above the ground. Which expression could you use to calculate the distance from the top of Brock's head to the ground if r represents the number of ladder rungs he has climbed?

    A $1.2r + 6$ B   **$1.2r$**   C $r + 6$ D $6r + 1.2$

6. An objects weight on Mars is 38% of it's weight on Earth. If an object weighs p, pounds on Earth, write an expression for its weight on Mars.

7. Which situation is best represented by the algebraic expression $200 + \frac{x}{4}$?

    A   Renee earned $200 creating a website and a 20% advance on the next website she creates for the same company.

    B   Joe had $200 and spent a fourth of it on a Hawaiian Falls season pass

    C   Skip is watching his calorie intake. He ate a 200 calorie breakfast bar and shared a pizza with 3 of his friends.

    D   There is a $200 set up fee for making T-shirts and a fourth of the cost is split between anyone ordering a shirt.

Writing Inequalities

FOUR CORNERS

Each corner of the room has an inequality symbol (< > ≤ ≥)

I will reveal a sentence that uses one of these inequalities. You must decide which one and stand near that corner!

HINT: The loudest person or biggest crowd is not always right!!

Four plus five is greater than one.

A negative number is less than a positive number.

Joe makes at least $400 per month.

The yard has a perimeter that is less than or equal to 70 feet.

Leo has fewer apples than Finn.

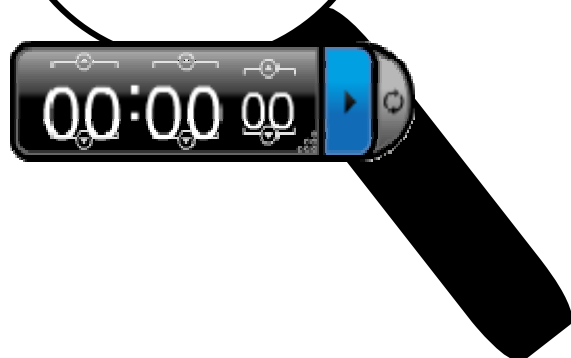Katie wants to spend no more than $50 on her homecoming dress.

You can drive at most 35 mph on Belt Line Road.

You want your grade to be greater than or equal to a 70 to pass!

Stella took her used books to half price books. She will accept no less than $5 each.

I receive more texts than my mom.

00:00.00

Writing Inequalities p.9

Essential Question	How do I translate words into algebraic inequalities?

Words & Phrases:

Fold your yellow sheet to look like the above. You may want to wait to glue until we are done writing.

Writing In_____ities p.9

Essential Question

How do I translate words into algebraic inequalities?

less than	greater than	Phrase Bank
fewer than	more than	is ≤

less than or equal to	greater than or equal to	
no more than	no less than	
at most	at least	

Writing Inequalities p.10

Essential Question How do I translate words into algebraic inequalities?

Define a variable and write an each statement in algebraic form.

1. The sum of a number and 5 is less than 17.

$$x + 5 < 17$$

2. Thirty-six is more than one half of a number.

$$36 > \frac{1}{2}x$$

3. Three-fourths of a number is at most -24.

$$\frac{3}{4}x \leq -24$$

4. A number decreased by 4 is at least 9.

$$x - 4 \geq 9$$

Now fill out the foldable. What word(s) told you the correct inequality symbol to use?

Writing Inequalities p.10

| **Essential Question** | How do I translate words into algebraic inequalities? |

5. Brandi can use no more than 500 texts per month on her current phone plan. She has already used 260. Write an inequality to show how many more texts Brandi can use.

$$260 + x \leq 500$$

6. The area of the triangle shown below is less than 42 square meters. Write an inequality that represents the area of the triangle.

5.3 m

x
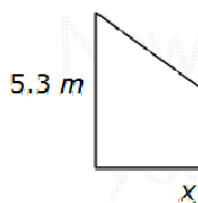
$$A = \tfrac{1}{2}bh$$
$$\tfrac{1}{2}(5.3)x < 42$$

7. The charge per mile for a sports rental car at Fast Rentals is $0.15. Mr. Zoom is on a business trip and must rent a car for all of his meetings. Write an inequality for the greatest number of miles Mr. Zoom can travel without going over his budget of $75 per rental for mileage charges.

$$.15x \leq 75$$

8. Kim's parents will only let her play games on her iPhone for an average of 30 minutes per day. She played games for 25, 32, 28 and 33 minutes for the last four days. Write an inequality that represents how many minutes she can play on the fifth day without going over a 30 minute average.

$$\frac{25 + 32 + 28 + 33 + \text{5th day}}{5} \leq 30$$

Algebra I – Unit 1: Writing Inequalities
Practice – Writing Inequalities
Name_____Date_____Per_____

Remember: Answers & hints will be posted @MSKMath on twitter!

Write each statement in algebraic form.

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

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

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

4. Negative four times a number is less than 204.

5. The quotient of twice a number and 7 is more than 21

6. The product of a number and twelve is 36.

7. The perimeter of the rectangle below is at least 814 feet.

37 feet

$4x$ feet
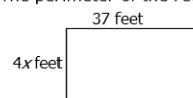
8. The mayor of Ali's town chose 160 students from her school to attend a city debate. This is no more than $\frac{1}{4}$ of the students in Ali's school. Which inequality represents the least number of students, n, who could attend Ali's school?

    A $160 \geq \frac{1}{4}n$

    B $160 \leq \frac{1}{4}n$

    C $160 < \frac{1}{4}n$

    D $160 > \frac{1}{4}n$

9. 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?

    A $32p \leq 1500$
    B $32 + p \geq 1500$
    C $32p \geq 1500$
    D $32 + p \leq 1500$

Writing Inequalities

Essential Question | How do I translate words into algebraic inequalities?

NO WORK = NO CREDIT = NO KIDDING!

1. $x - 4 > 42$

2. $(3/4)x \leq -18$

3. $(x/7) \geq -3$

4. $-4x < 204$

5. $(2x / 7) > 21$

6. This is not an inequality!!! What symbol does "is" mean?

7. Remember: the perimeter of a rectangle means to add all the sides!

8. B, because *is no more than* means *less than or equal to*.

9. Can Claudia spend more than $1500? What symbol represents this?