

Algebra II
Section 2.1 day 3
Solving linear inequalities

$$QL = \frac{3mP^2}{Q}$$

$$\frac{QL}{3m} = \frac{3mP^2}{3m}$$

$$\frac{QL}{3m} = P^2$$

Aug 24-5:55 PM

Aug 25-9:36 AM

Bell Work

When you go to an amusement park and you could finally ride roller coasters, how tall did you need to be? Write as an equation or inequality.

$$h \geq 48 \text{ in.}$$

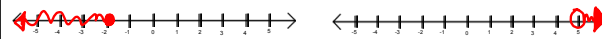
Aug 24-5:56 PM

How do you solve an inequality? **RULE**
 Solve and Graph. *When you x or ÷ by a NEGATIVE you flip your inequality sign.*

1. $8a - 2 \geq 13a + 8$ 2. $9x + 4 < 12x - 11$

$$\begin{array}{r} -13a \\ -5a - 2 \geq 8 \\ -5a \geq 10 \\ -a \geq 2 \\ a \leq -2 \end{array}$$

$$\begin{array}{r} -12x \\ -3x + 4 < -11 \\ -3x < -15 \\ x > 5 \end{array}$$



Solutions
 Algebraic: $a \leq -2$
 Set: $\{a | a \leq -2\}$
 Interval: $(-\infty, -2]$

$< \text{ or } > \text{ ()}$
 $\leq \text{ or } \geq \text{ []}$

Solutions
 Algebraic: $x > 5$
 Set: $\{x | x > 5\}$
 Interval: $(5, \infty)$

Aug 24-5:58 PM

3. $-3x + 8 \leq 14$

$$\frac{-3x}{-3} \leq \frac{6}{-3}$$

$$x \geq -2$$

4. $3(x - 1) > 7(x + 3)$

$$3x - 3 > 7x + 21$$

$$-5x - 21 > 21$$

$$-24 > 4x$$

$$-6 > x$$

Solutions

Algebraic: $x \geq -2$

Set: $\{x | x \geq -2\}$

Interval: $[-2, \infty)$

Solutions

Algebraic: $x < -6$

Set: $\{x | x < -6\}$

Interval: $(-\infty, -6)$

Aug 24-6:03 PM

5. A digital answering machine has a total capacity of 32 minutes for the personal announcement and incoming messages. Incoming messages are limited to 3 minutes each and the announcement is 30 seconds long.

a) Find the possible number of 3 minute messages the machine can record.

b) The average length of an incoming message is 1.5 minutes. How many messages of average length can the machine record?

Aug 24-6:04 PM

c. A friend has left 2 maximum length messages on your machine. In addition, you have 5 minutes worth of saved messages. How many more average length messages can your machine record?

Aug 24-6:07 PM

Conclusion

- How do we solve an inequality?
Like an equation with one new rule
- What is the rule for multiplying or dividing by a negative number?
Flip inequality sign
- What is the difference between the open circle and the closed circle?
> or < ≥ or ≤
() []

Aug 24-6:09 PM

Assignment
Inequalities Worksheet

Aug 24-6:10 PM