

2.3 Solve Inequalities

ALGEBRA

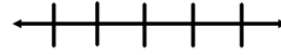
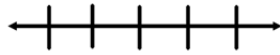
Write your questions here!



What is the solution set to the inequality? Express the solution graphically and in set notation.

Ex 1:

Ex 2:



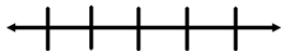
Ex 3:



Will performing the following operations change the solution set?

Start by adding 10 to both sides.
Solve, graph and check.

Start by multiplying by -2 to both sides.
Solve, graph and check.



So for inequalities we can:

1) Use the addition Property of Inequalities

2) Use the multiplication Property of Inequalities

Ex 4: Solve using only properties allowed for inequalities.

Shortcut!

Two more:

Ex 5:

Ex 6:

You try:

A)

B)

SUMMARY:

Now, summarize your notes here!

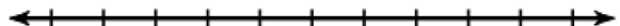
2.3 Solving Inequalities

PRACTICE

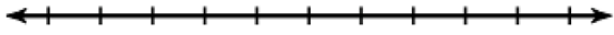
Directions: Solve each inequality. Express the solution graphically and in set notation.

1) $7 < \frac{x}{9} + 6$

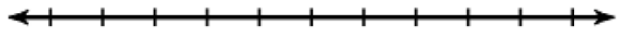
2) $-7 + \frac{h}{3} \leq -13$



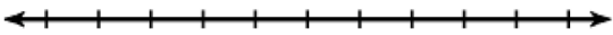
$$3) 50.32 < -6.29(8.5 + x)$$



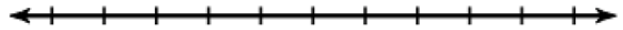
$$4) -3 - 3a + 6a \neq 9$$



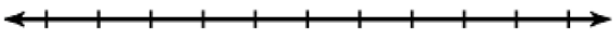
$$5) -5(1 - 2n) \geq -17 + 8n$$



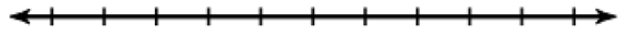
$$6) 30 - 4a \geq -2(7a - 5)$$



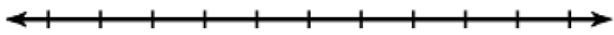
$$7) \frac{b+5}{22} > 1$$



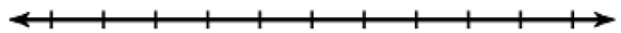
$$8) -36 > -3x + 6$$



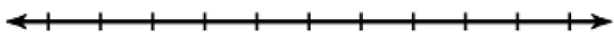
$$9) 11 \neq 2b - 1 - 6b$$



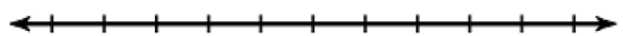
$$10) -5.7x - 10.3 < 7.3x + 14.4$$



$$11) 16 + 4x \leq -4(x + 8)$$



$$12) -27 - 7h \geq -2h - (8h + 6)$$



Directions: Multiply the polynomials.

13) $2x(4x - 8)$

14) $(2x - 1)(4x - 8)$

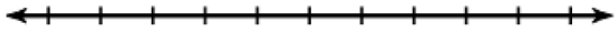
15) $(2x - 1)(4x^2 - 8x + 3)$

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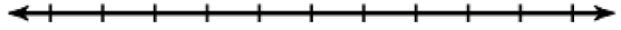
WRAP UP

Directions: Solve each inequality. Express the solution graphically and in set notation.

1) $-17.92 > -0.7n - 2.5n$



2) $-(3 + 3g) \leq 5g + 5$



3) Brust takes his cut (one-fourth) of the Algebros profit from selling fidget spinners to the store and bought 10 donuts for \$12. He came home with more than \$3.00.

a) Write an inequality that represents the situation and use it to find out how much money the Algebros had made from selling fidget spinners. Make sure you define your variables.

SMP #4

b) How would the solution set change if the number of Algebros went from four to six? Construct a viable argument to support your reasoning.

SMP #7

4) Make an inequality that will have the given solution set and conditions.

a) $\{x \text{ real} | x \geq 3\}$ with at least one operation.

b) $\{x \text{ real} | x \geq 3\}$ with at least one distribution.

c) $\{x \text{ real} | x \geq 3\}$ with variables on both sides

d) $\{ \}$

EXIT TICKET -

1) Find the solution set. Express the solution in set notation and graphically.

$$-15 + 7m > 6m + 7(6 - 8m)$$

2) We're doing the following problem in class, $-10x \geq 40$ and Sully says that the shortcut to get $x \leq -4$ is to always flip the inequality symbol when dividing by a negative. Explain or demonstrate why the shortcut works.