Mr. Gmerek

Algebra 2

Problem Set 1.6



1. An inequality is used to compare numbers.
   1. Perform the indicated operation to the inequality below and state whether the result is true or false. For each step, start over with the initial inequality.



* + 1. Add 4 to both sides
    2. Subtract 12 from both sides
    3. Multiply both sides by 4
    4. Divide both sides by 7
    5. Add -4 to both sides
    6. Subtract -12 from both sides
    7. Multiply both sides by -4
    8. Divide both sides by -7
  1. Make a conjecture about performing operations on both sides of an inequality. Explain **why** this is necessary.

1. What does it mean to be a solution to an inequality?



* 1. How many solutions does an inequality have? Give an example that illustrates your answer(s),



1. Solve 5x + 13 < -27. Represent your solution graphically.
2. Solve the following **compound inequalities** and represent their solutions graphically.



* 1. 
  2. 

1. Solve the following and represent the solutions graphically: 23x – 21 < 9 – 5x



1. Why does #4b have the word “or” in it, but #4a does not?
2. The weight of a liger can be given by the equation w = 12 + 3t, where t is the age of the liger in weeks. Describe the age of a liger that weighs up to 60 pounds.
3. 



* 1. Shannon wants to go on vacation to a place where the temperature is no more than 30º C and no less than 15° C. Rewrite this as an inequality in Fahrenheit.



1. Write a compound inequality that does not have an infinite number of solutions.
2. The inequalities throughout this problem set are **linear inequalities**. Why are they called this?