

Name _____

Date _____ Pd. _____

Notes: Solving Multi-Step Inequalities

Example 1

Solve $6x - 4 \leq 2x + 12$.

Example 2

Solve $3a - 15 > 4 + 5a$.

Example

Solve $3a - 2(6a - 4) > 4 - (4a + 6)$.

What is the key difference between solving equations and inequalities?

When solving inequalities, whenever we choose a negative number to multiply or divide by, we must remember to _____ the direction of the inequality.

Name _____

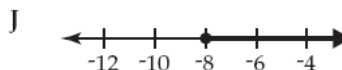
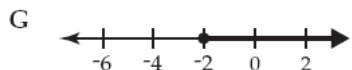
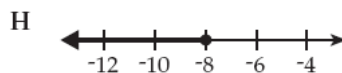
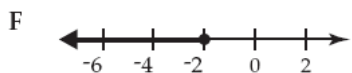
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Exit Card: Solving Multi-Step Inequalities

1. Look at the inequality below.

$$12 - 4x \leq 20$$

Which of these shows the solution to this inequality?



2. Sue has \$75 to spend on shirts and shorts. The shirts are on sale for \$10 each, including tax, and the shorts are on sale for \$15 each, including tax.
- Write an inequality that represents the situation above, where x represents the number of shirts and y represents the number of shorts.
 - What is the maximum number of shorts Sue can buy if she buys 2 shirts? Use mathematics to explain how you determined your answer. Use words, symbols, or both in your explanation. (If you need to draw a graph for your solution, use the grid provided in the Answer Book.)
 - List all the number combinations of shirts and shorts Sue can buy to spend exactly \$75. Use mathematics to justify your answer.

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Homework: Pages 335 – 336 (15 – 19, 43, 44, 47 – 49)

15. $-3t + 6 \leq -3$

16. $-5 - 8f > 59$

17. $-2 - \frac{d}{5} < 23$

18. $\frac{w}{8} - 13 > -6$

19. $7q - 1 + 2q \leq 29$

43. Write an inequality that can be used to find the temperatures in degrees Fahrenheit for which mercury is a solid (less than -38°C). $\left[C = \frac{5(f - 32)}{9} \right]$

44. For what temperatures will mercury be a solid?

47. Nicholas wants to order a pizza. He has a total of \$13.00 to pay the delivery person. The pizza costs \$7.50 plus \$1.25 per topping. If he plans to tip 15% of the total cost of the pizza, how many toppings can he order?

48. Assume that a worker making a \$500 per week goes on strike until he gets a 4% raise. Given his raise in salary, how many weeks could he be out on strike and still make at least as much for the next 52 weeks as he would have made without a strike?

49. How would your answer to exercise 48 change if the worker had been making \$600 per week?