

Name: _____

Solving Linear Inequalities

Exercise 1: Write each compound inequality without using **and**

1) $y \leq -3$ and $y \geq -12$

2) $y \leq 4$ and $y \geq -1$

3) $6 < x$ and $x \leq 8$

4) $-2 < r$ and $1 > r$

5) $b > 0$ and $b < 5$

6) $h > -8$ and $h < 8$

Exercise 2: Solve each compound inequality. Then graph the solution set.

1) $6g - 8 > 4$ or $6g + 2 < -4$

2) $1 < 2c - 7 < 7$

3) $k + 8 > -5$ or $k - 8 < 8$

4) $5r - 2 \geq -2$ and $r \neq 0$

5) $2 \leq a + 3 < 7$

6) $z + 3 > 7$ or $z - 5 \leq -12$

7) $3j > 18$ or $j - 3 \geq 5$

8) $-5 < y - 1 < -3$

9) $7 > 3w > 1$

10) $-11 < r - 2 < 12$

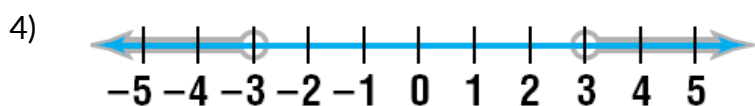
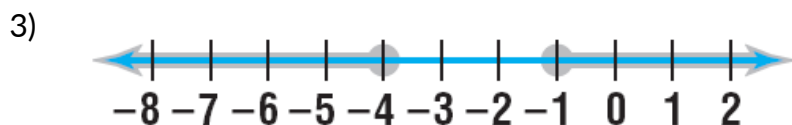
11) $c - 2.4 > 7.6$ or $c - 8.8 < 0$

12) $p - 5 > -2$ or $-2p < 4p - 1$

Exercise 3: Write a compound inequality for each solution shown below.

1)





Exercise 4: Define a variable, write a compound inequality, and solve each problem. Then check your solution

- 1) The sum of three times a number and two lies between 8 and 11
- 2) Eight less than 4 times a number is at most 24 and at least -12

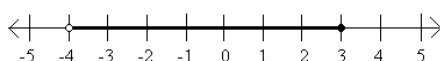
Exercise 5: Lisa can carry no more than 50 newspapers on her paper route. Express the number of papers that Lisa can carry as an inequality.

Exercise 6: A box of macaroni and cheese lists two sets of directions for cooking. It says to heat the macaroni for 11 to 13 minutes on the stove or 12 to 14 minutes in the microwave.

- a) Write an inequality that represents possible heating times.
- b) Graph the solution.

Exercise 7: To construct any triangle, the sum of the lengths of two sides must be greater than the length of the third. Suppose that two sides of a triangle have lengths of 4 inches and 12 inches. What are the possible values for the length of the third side? Express your answer as a compound inequality.

Exercise 8: What inequality does the following graph represent?



Exercise 9: What inequality does the following graph represent?

