Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_

**Section 5-4**

**Compound Inequalities**

**Pages 306 - 311**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Part I**  **Vocabulary** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | two inequalities joined together (either by ‘and’ or ‘or’) | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | a graph where two inequalities overlap (“and”) | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | a graph of two inequalities (“or”) | |
| **Part II**  **“AND” Inequalities** | Graph the following two inequalities on their own number lines with **5 in the middle**:  Number line - blank (-5 to 5)  x > 3  x < 7  Number line - blank (-5 to 5)  Now, put both inequalities on the same number line. The solution would be:  Number line - blank (-5 to 5)  x > 3 and x < 7  3 < x < 7  Example 1: Solve Part 1 and Part 2.   |  |  |  | | --- | --- | --- | | Part 1: **-2 < x - 3** | Part 2: **x - 3 < 4** | Now, if we were given, **-2 < x - 3 < 4**, how should we go about solving it? |   Solve the following compound inequality using “and” by **breaking it into two separate inequalities.** Then, graph it using one number line.  Number line - blank (-5 to 5)  -2 < x - 3 < 4  **Solution:** |
| **Part II**  **“AND” Inequalities**  **continued** | Example 2: Solve the compound inequality. Then, graph the solution on a number line.  -4 < 2x + 2 < 4  Number line - blank (-5 to 5)  **Solution:**  TRY ON YOUR OWN:  Number line - blank (-5 to 5)  6 < r + 7 < 10  **Solution:**  In Summary: To solve a **compound inequality** with an intersection (“and”), we must:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Part III**  **“OR”**  **Inequalities** | Graph the following two inequalities on their own number lines **with 0 in the middle**:  Number line - blank (-5 to 5)  x > 2  x < -1  Now, put both inequalities on the same number line. The solution would be:  Number line - blank (-5 to 5)  x > 2 or x < -1  Example 3: Solve the compound inequality. Then, graph the solution on a number line.  x + 2 > 11 or 2 + 4x < 10  Number line - blank (-5 to 5)  Number line - blank (-5 to 5)  **Solution:** |
| **Part III**  **“OR”**  **Inequalities**  **Continued** | TRY ON YOUR OWN:  Number line - blank (-5 to 5)  a + 1 > 7 or a - 1 < 3  **Solution:**  In Summary: To solve a **compound inequality** with a union (“or”), we must:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Part IV**  **Reading Number Lines** | *Directions: Look at the following graph and write the compound inequality.*   |  |  | | --- | --- | | Example 4:  http://hotmath.com/images/gt/lessons/genericalg1/and_inequality.gif | ViewImageExample 5: |   TRY ON YOUR OWN:   |  |  | | --- | --- | | 3.  ViewImage | ViewImage 4. |   In Summary: To write a **compound inequality** from a number line, we must consider:  ­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Part V**  **Classwork** | **Part 1: Solve each compound inequality. Then, graph the solution on a number line.**  **Use Example 1 and 2 for help.**   |  |  | | --- | --- | | 1. -3 < x + 2 < 7   Number line - blank (-5 to 5)  **Solution:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. -5 < 3p + 7 < 22   Number line - blank (-5 to 5)  **Solution:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | 1. -1 < 4m + 7 < 11   Number line - blank (-5 to 5)  **Solution:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. 7 < 3n + 1 < 13   Number line - blank (-5 to 5)  **Solution:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |   **Part 2: Solve each compound inequality. Then, graph the solution on a number line.**  **Use Example 3 for help.**   |  |  | | --- | --- | | 1. m + 14 > 15 or m - 9 < -10   Number line - blank (-5 to 5)  **Solution:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. 3x - 1 < -7 or 4x + 1 > 9   Number line - blank (-5 to 5)  **Solution:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | 1. 4m - 2 < 14 or 5 - 3m < -13   Number line - blank (-5 to 5)  **Solution:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. 3a + 4 > 19 or 6a - 1 < 11   Number line - blank (-5 to 5)  **Solution:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |   **Part 3: Write an inequality for each number line. Use Example 4 and 5 for help.**   |  |  | | --- | --- | | http://images.flatworldknowledge.com/redden/redden-fig02_x025.jpg | 1. ViewImage | |
| **Part VI**  **Homework** | Pg. 326 #31 - 34 |