



## Solving and Graphing Inequalities

### Today's Standard

7.EE.B4b - Solve word problems leading to inequalities of the form  $px + q > r$  or  $px + q < r$ , where  $p$ ,  $q$ , and  $r$  are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.

| Cues               | Notes                                                                                                                                                                                       |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inequality         | An inequality is a mathematical statement that compares two expressions using '>', '<', '≥', or '≤'.                                                                                        |
| Graphing           | Graphing an inequality involves drawing the solution set on a number line.                                                                                                                  |
| Real-world example | Example: A salesperson earns \$50 per week plus \$3 per sale. To earn at least \$100, write and solve the inequality.                                                                       |
| Solution set       |                                                                                                                                                                                             |
| Inequality symbol  | The solution set of an inequality includes all values that make the inequality true.<br><br>The inequality symbol direction changes only when multiplying or dividing by a negative number. |

### Summary

Understanding and solving inequalities involves translating real-world problems into mathematical statements, graphing the solutions, and interpreting the results in context.