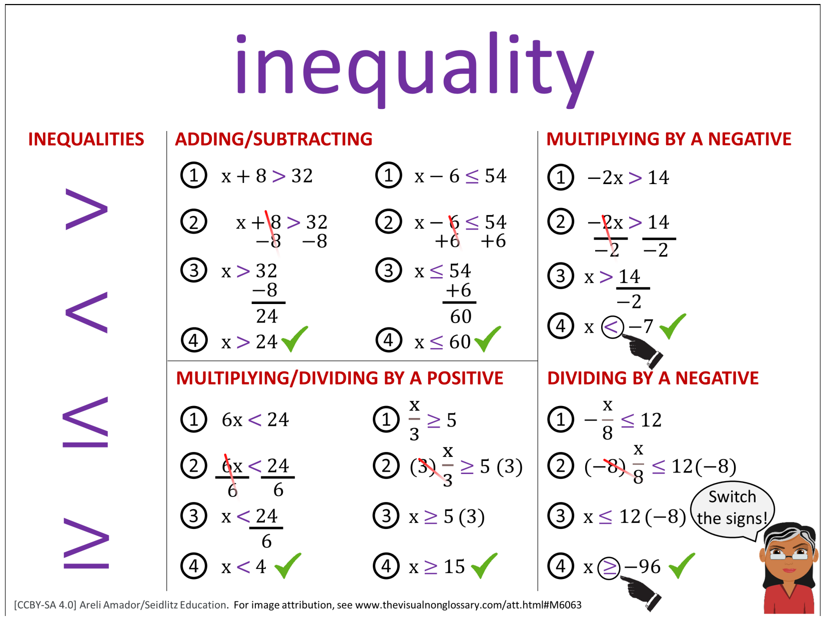
The Visual Non-Glossary™

Understanding Inequality

To explore how different operations change an inequality and how that helps you check your answer



Pay Attention To:

- A situation where you must flip the inequality sign
- The difference between solving equations and inequalities
- A symbol that shows a comparison
- An example of solving an inequality
- Something that affects whether a number works in an inequality

An **inequality** shows that two values are not always equal. It uses signs like **, >, ≤, or ≥ to compare numbers. If you need at least 70 points to win, you can write x ≥ 70.**

Solving an **inequality** is like solving an equation. You try to get the variable alone. But there is one big difference. If you multiply or divide by a negative, you must flip the sign. If you don't, the answer will be wrong.

Here is an example: **–2x . Divide both sides by –2. Now you must flip the to >. The answer is x > –5.**

You might wonder what numbers could work. Some will make the **inequality** true. Some will not. What you do to the numbers helps you figure that out.

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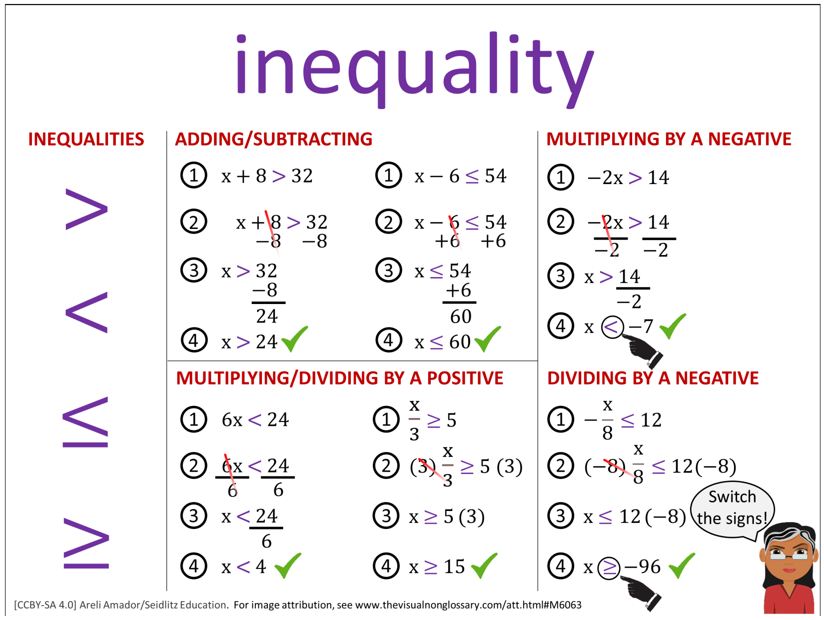

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An **inequality** is a mathematical sentence that shows how two values compare when they are not necessarily equal. Symbols like **, >, ≤, and ≥ help show if something is less than, greater than, or possibly equal to another number. For example, if you need at least 70 points to win a game, the inequality would be x ≥ 70.**

Solving inequalities is a lot like solving equations. You can use the same steps to isolate the variable. But there's one key difference. If you multiply or divide by a negative number, you have to flip the **inequality** sign. This is because negative numbers reverse the direction of comparison. If this step is skipped, the solution becomes incorrect.

Let's say you start with the inequality **–2x . To solve for x, divide both sides by –2. Since you're dividing by a negative, you must flip the to >, and the solution becomes x > –5.**

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You might wonder which numbers could work in an inequality. Some values will make the comparison true, while others will not. What you do to both sides and how the signs behave plays a big role in figuring that out.

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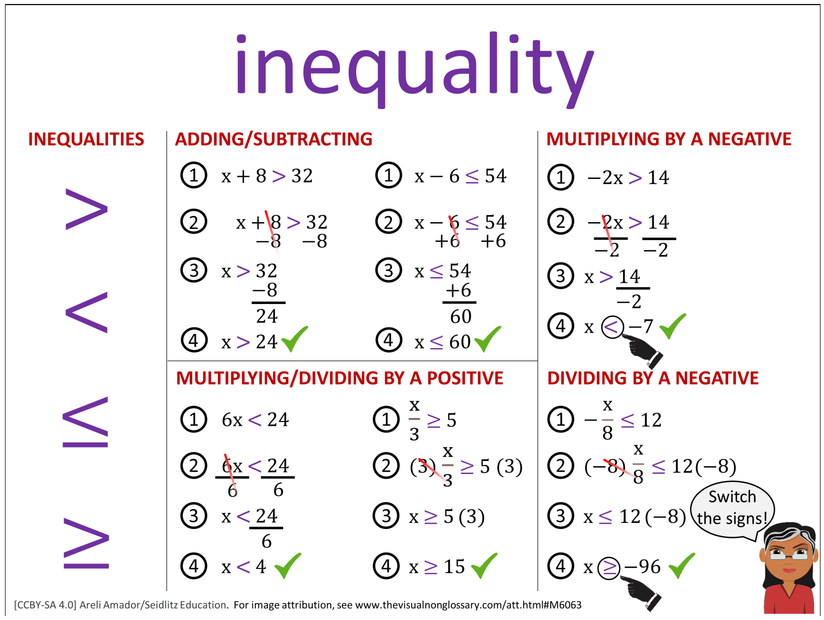

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An **inequality** compares two expressions and shows that one is greater, less, or possibly equal to the other. It uses relational symbols like **, >, ≤, and ≥ to express that comparison. For instance, scoring at least 70 points in a challenge would be written as x ≥ 70.**

The process of solving an **inequality** is nearly identical to solving an equation. You isolate the variable using inverse operations. The critical difference appears when you multiply or divide both sides by a negative number — this requires flipping the inequality sign to maintain a true statement.

Take the inequality **–2x . Dividing both sides by –2 changes the direction of the inequality. The correct solution becomes x > –5 because the division was done using a negative.**

Some values will meet the conditions of the **inequality**, while others will not. The operations you choose and the sign you end with are essential when determining which values are valid.

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