Inequalities Involving Multiplication and Division

Multiplication and Division Properties of Inequalities

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| --- | --- |
| ***Positive Number*** | ***Negative Number*** |
| You can multiply or divide **both sides** of an inequality by a **positive number** and the **inequality symbol** will remain the **same** | If you multiply or divide **both sides** of an inequality by a **negative number**, you must **reverse** the **inequality** **symbol** |

Solve each inequality:

Inequality 🡪 Use denominator to multiply Inequality 🡪 Solution to Inequality

1. -4x > 52 🡪 🡪 x < -13

Inequality 🡪 Divide Inequality by **negative coefficient** 🡪 Solution to Inequality

\*\*\*\*THE INEQUALITY SYMBOL WAS REVERSED BECAUSE WE DIVIDED BY A NEGATIVE COEFFICIENT\*\*\*\*

Scenario:

**Every month**, **$35** is withdrawn from Leon’s saving account to pay for his gym membership. He has enough savings to withdraw **no more than** **$315**. For how many months can Leon pay for his gym membership?

Step(1): Write the equation

Let “m” represents the months Leon can pay for gym membership

35m ≤ 315

Step(2): Solve the inequality

35m ≤ 315 🡪 🡪 m ≤ 9 (pay 9 months)