Understanding Ratios

A ratio compares two quantities to show how much of one thing there is compared to another. For example, if there are 8 apples and 4 oranges, the ratio of apples to oranges is 8:4.

Step-by-Step Guide to Simplify Ratios Using Decimals

1. **Write down the ratio:** Start with the given ratio. For example, 8:4.
2. **Convert each number to a decimal by dividing:** Divide the first number by the second number. For 8:4, divide 8 by 4, which gives 2.
3. **Understand the decimal:** The decimal result (2) means for every 1 orange, there are 2 apples.
4. **Express the simplified ratio:** Since 2 is a whole number here, your simplified ratio is 2:1.
5. **Check if you can simplify further:** Sometimes decimals might not be whole numbers. For example, with ratio 3:4, divide 3 by 4 = 0.75. This means for every 1 unit of the second quantity, you have 0.75 units of the first.
6. **Convert back to whole numbers:** Multiply both decimals by the same number to get whole numbers. For 0.75:1, multiply both by 4, resulting in 3:4 (which is the original ratio). This confirms you've simplified it correctly.

Why Use Decimals to Simplify Ratios?

Using decimals helps you understand the exact relationship between two numbers, especially when they aren't easy to simplify by just dividing by common factors. It gives you a more precise idea of how the quantities compare.

Example Practice

Let's simplify 9:6 using decimals.

1. Divide 9 by 6: 9 ÷ 6 = 1.5
2. This means for every 1 unit of the second quantity, the first quantity is 1.5 units.
3. Multiply both parts by 2 to remove the decimal: 1.5 × 2 = 3, and 1 × 2 = 2.
4. Simplified ratio is 3:2.

So, 9:6 simplifies to 3:2 using decimals!

If you practice this method, simplifying ratios will become easier and more intuitive. Keep practicing with different numbers!