Equivalent Ratio

Two or more ratios that express the same relation or comparison of numbers are known as equivalent ratios.

There are two methods to check whether the given ratios are equivalent or not- the cross-multiplication method and the HCF method.

Follow the steps given below to find equivalent ratios using the cross-multiplication method:

Find whether 2:3 and 16:24 are equivalent ratios or not.

- **Step 1:** Write both the ratios in fractional form (numerator over denominator).
- **Step 2:** Do the cross multiplication. Multiply 2 by 24 and 3 by 16.
- **Step 3:** If both products are equal, it means that they are equivalent ratios. Here $2 \times 24 = 3 \times 16 = 48$. Therefore, they are equivalent ratios.

Now, let us understand the HCF method to find whether 10:8 and 30:24 are equivalent ratios or not

- **Step 1:** Find the HCF of the antecedent and consequent of both ratios. Here,
  HCF (10, 8) = 2, and HCF (30, 24) = 6.
- **Step 2:** Divide the terms in both ratios by their respective HCF. So, we get $(10 \div 2):(8 \div 2) = 5:4$ and $(30 \div 6):(24 \div 6) = 5:4$.
- **Step 3:** If the reduced form of both ratios is equal, it means they are equivalent.
  Here, 10:8 = 30:24.