

Equivalent Fractions and Simplifying

Different numbers, same value: how to make equivalent fractions and cut any fraction down to its lowest terms.

1

= Spot equal values

Equivalent fractions are worth the same. $1/2 = 2/4 = 4/8$: on a fraction wall they line up exactly.

2

× Multiply top and bottom

Multiply the numerator and denominator by the same number. $2/3 \times 4/4 = 8/12$. Multiplying by $4/4$ is multiplying by 1.

3

🔍 Find a missing number

$3/5 = ?/20$. What turns 5 into 20? $\times 4$. Do the same to the top: $3 \times 4 = 12$, so $3/5 = 12/20$.

4

≡ Find the HCF

To simplify $18/24$, list factors. 18: 1, 2, 3, 6, 9, 18. 24: 1, 2, 3, 4, 6, 8, 12, 24. The highest common factor is 6.

5

÷ Divide by the HCF

Divide top and bottom by 6: $18 \div 6 = 3$ and $24 \div 6 = 4$. So $18/24 = 3/4$.

6

✓ Check it is fully simplified

3 and 4 share no factor except 1, so $3/4$ is in its lowest terms. Smaller steps reach it too: $18/24 \rightarrow 9/12 \rightarrow 3/4$.



Only multiply or divide

Adding the same number to the top and bottom changes the value: $1/2$ is not $2/3$. Equivalent fractions only come from multiplying or dividing both parts by the same number.

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3. Adding and Subtracting Fractions