MATH · FRACTION OPERATIONS

Fraction rules cheat sheet

1 Simplify

Divide the top and the bottom by the same number until only 1 divides both.

$$\frac{6}{8} \begin{matrix} \div 2 \\ \div 2 \end{matrix} = \frac{3}{4}$$

The greatest common factor does it in one step.

2 Mixed numbers

Improper to mixed: divide the top by the bottom. Mixed to improper: multiply the whole by the bottom, then add the top.

$$\frac{7}{4} = 1\frac{3}{4}$$

$7 \div 4 = 1$ remainder 3 $\quad 1 \times 4 + 3 = 7$

3 Add

Make the bottoms the same. Add the tops. Keep the bottom.

$$\frac{1}{2} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

Common denominator: 6

4 Subtract

Make the bottoms the same. Subtract the tops. Keep the bottom.

$$\frac{3}{4} - \frac{1}{3} = \frac{9}{12} - \frac{4}{12} = \frac{5}{12}$$

Common denominator: 12

5 Multiply

Multiply the tops. Multiply the bottoms. Then simplify.

$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$$

No common denominator needed.

6 Divide

Keep the first fraction. Change ÷ to ×. Flip the second fraction.

$$\frac{1}{2} \div \frac{3}{4} = \frac{1}{2} \times \frac{4}{3} = \frac{4}{6} = \frac{2}{3}$$

Keep, change, flip.

Always check: can the answer be simplified? Is an improper fraction better as a mixed number?

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