

# Rechnen mit Bruchzahlen

## Addieren und Subtrahieren von gleichnamigen Brüchen

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

$$\frac{1}{2} + \frac{3}{2} = \frac{4}{2} = 2$$

$$\frac{1}{5} + \frac{3}{5} = \frac{4}{5}$$

$$\frac{4}{9} + \frac{7}{9} = \frac{11}{9} = 1\frac{2}{9}$$

$$\frac{2}{3} + \frac{8}{3} = \frac{10}{3} = 3\frac{1}{3}$$

$$\frac{3}{10} + \frac{9}{10} = \frac{12}{10} = 1\frac{2}{10}$$

$$\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$$

$$\frac{7}{5} - \frac{3}{5} = \frac{4}{5}$$

$$\frac{5}{2} - \frac{3}{2} = \frac{2}{2} = 1$$

$$\frac{8}{9} - \frac{5}{9} = \frac{3}{9}$$

$$\frac{7}{6} - \frac{4}{6} = \frac{3}{6}$$

$$\frac{13}{10} - \frac{6}{10} = \frac{7}{10}$$

## Addieren und Subtrahieren von gemischten Zahlen

$$1\frac{1}{4} + 1\frac{1}{4} = 2\frac{2}{4}$$

$$2\frac{1}{2} + 4\frac{1}{2} = 6\frac{2}{2} = 7$$

$$3\frac{3}{6} + 2\frac{4}{6} = 5\frac{7}{6} = 6\frac{1}{6}$$

$$2\frac{4}{7} + 1\frac{5}{7} = 3\frac{9}{7} = 4\frac{2}{7}$$

$$2\frac{2}{5} + 4\frac{4}{5} = 6\frac{6}{5} = 7\frac{1}{5}$$

$$1\frac{7}{10} + 2\frac{9}{10} = 3\frac{16}{10} = 4\frac{6}{10}$$

$$4\frac{3}{4} - 2\frac{1}{4} = 2\frac{2}{4}$$

$$6\frac{1}{2} - 5\frac{1}{2} = 1$$

$$6\frac{3}{8} - 4\frac{1}{8} = 2\frac{2}{8}$$

$$3\frac{5}{6} - 3\frac{2}{6} = \frac{3}{6}$$

$$5\frac{4}{5} - 2\frac{2}{5} = 3\frac{2}{5}$$

$$7\frac{5}{12} - 4\frac{3}{12} = 3\frac{2}{12}$$

Beachte!

$$3\frac{1}{5} - 1\frac{4}{5} = 2\frac{6}{5} - 1\frac{4}{5} = 1\frac{2}{5}$$

Berechne!

$$4\frac{1}{4} - 2\frac{2}{4} = 3\frac{5}{4} - 2\frac{2}{4} = 1\frac{3}{4}$$

$$4\frac{2}{6} - 2\frac{5}{6} = 3\frac{8}{6} - 2\frac{5}{6} = 1\frac{3}{6}$$

$$2\frac{3}{10} - 1\frac{7}{10} = 1\frac{13}{10} - 1\frac{7}{10} = \frac{6}{10}$$

$$1\frac{1}{3} - \frac{2}{3} = \frac{4}{3} - \frac{2}{3} = \frac{2}{3}$$

$$2\frac{1}{4} - \frac{3}{4} = 1\frac{5}{4} - \frac{3}{4} = 1\frac{2}{4}$$

## Multiplizieren eines Bruches mit einer natürlichen Zahl

$$\frac{1}{2} \cdot 3 = \frac{1 \cdot 3}{2} = \frac{3}{2} = 1\frac{1}{2}$$

Der Zähler wird mit der natürlichen Zahl multipliziert.

Berechne!

$$\frac{3}{4} \cdot 2 = \frac{6}{4} = 1\frac{2}{4}$$

$$\frac{2}{5} \cdot 7 = \frac{14}{5} = 2\frac{4}{5}$$

$$\frac{5}{8} \cdot 4 = \frac{20}{8} = 2\frac{4}{8}$$

$$\frac{5}{6} \cdot 3 = \frac{15}{6} = 2\frac{3}{6}$$

$$\frac{2}{3} \cdot 6 = \frac{12}{3} = 4$$

$$\frac{2}{9} \cdot 8 = \frac{16}{9} = 1\frac{7}{9}$$

Beachte!

$$3\frac{1}{2} \cdot 4 = \frac{7}{2} \cdot 4 = \frac{7 \cdot 4}{2} = \frac{28}{2} = 14$$

Gemischte Zahlen werden vor dem Multiplizieren in unechte Brüche umgeformt!

Berechne!

$$1\frac{1}{4} \cdot 5 = \frac{5}{4} \cdot 5 = \frac{25}{4} = 6\frac{1}{4}$$

$$2\frac{1}{3} \cdot 2 = \frac{7}{3} \cdot 2 = \frac{14}{3} = 4\frac{2}{3}$$

$$3\frac{5}{8} \cdot 2 = \frac{29}{8} \cdot 2 = \frac{58}{8} = 7\frac{2}{8}$$

$$3\frac{3}{4} \cdot 6 = \frac{15}{4} \cdot 6 = \frac{90}{4} = 22\frac{2}{4}$$

$$4\frac{4}{5} \cdot 3 = \frac{24}{5} \cdot 3 = \frac{72}{5} = 14\frac{2}{5}$$

$$1\frac{3}{10} \cdot 8 = \frac{13}{10} \cdot 8 = \frac{104}{10} = 10\frac{4}{10}$$

## Dividieren eines Bruches durch eine natürliche Zahl

$$\frac{3}{2} : 3 = \frac{3:3}{2} = \frac{1}{2}$$

Der Zähler wird durch die natürliche Zahl dividiert.

$$3\frac{3}{4} : 5 = \frac{15}{4} : 5 = \frac{15:5}{4} = \frac{3}{4}$$

Gemischte Zahlen werden vor dem Dividieren in unechte Brüche umgeformt!

Berechne!

$$\frac{6}{5} : 3 = \frac{2}{5}$$

$$3\frac{3}{4} : 5 = \frac{15}{4} : 5 = \frac{3}{4}$$

$$\frac{20}{7} : 5 = \frac{4}{7}$$

$$5\frac{2}{5} : 9 = \frac{27}{5} : 9 = \frac{3}{5}$$

$$\frac{12}{10} : 6 = \frac{2}{10}$$

$$6\frac{2}{9} : 7 = \frac{56}{9} : 7 = \frac{8}{9}$$