

Bruchrechnen: Klammern und Rechenhierarchie

Berechne Bruchaufgaben mit Klammern und mehreren Rechenschritten. Beachte die Rechenhierarchie sorgfältig und vereinfache jedes Resultat vollständig.

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Klammern und Rechenhierarchie

1) $\frac{2}{3} + \frac{3}{4} \cdot \frac{8}{9}$

2) $\left(\frac{2}{3} + \frac{3}{4}\right) \cdot \frac{8}{9}$

3) $\frac{5}{6} - \left(\frac{1}{4} + \frac{2}{9}\right)$

4) $\left(\frac{7}{8} - \frac{1}{3}\right) : \frac{13}{12}$

5) $\frac{3}{5} + \frac{2}{3} \cdot \left(\frac{9}{10} - \frac{1}{4}\right)$

6) $\left[\frac{5}{6} - \left(\frac{1}{2} - \frac{1}{3}\right)\right]^2$

7) $\frac{1}{2} + \frac{3}{4} \cdot \left(\frac{5}{6} - \frac{1}{3}\right)$

8) $\left(\frac{7}{9} - \frac{1}{6}\right) \cdot \left(\frac{3}{5} + \frac{9}{10}\right)$

9) $\frac{5}{8} - \left[\frac{3}{4} - \frac{2}{3} \cdot \left(\frac{9}{10} - \frac{3}{5}\right)\right]$

10) $\left(\frac{2}{3} + \frac{5}{12}\right) : \frac{13}{8} - \frac{1}{7}$

11) $\left(\frac{3}{5}\right)^2 + \frac{7}{10} : \left(\frac{5}{6} - \frac{1}{3}\right)$

12) $\left[1 - \left(\frac{3}{4} - \frac{2}{5}\right)\right] : \frac{13}{10}$

13) $\frac{2}{3} \cdot \left[\frac{5}{4} - \left(\frac{7}{8} + \frac{1}{6}\right)\right] + \frac{1}{9}$

14) $\left(\frac{11}{12} - \frac{2}{3}\right)^2 : \left(\frac{5}{8} - \frac{1}{2}\right)$

15) $\frac{3}{7} + \left\{ \frac{5}{6} - \left[\frac{1}{2} + \frac{3}{4} \cdot \left(\frac{2}{3} - \frac{2}{9} \right) \right] \right\}$

16) $\left[\frac{4}{5} : \frac{2}{3} - \left(\frac{7}{6} - \frac{1}{4} \right) \right] \cdot \frac{9}{13}$

Lösungen

Klammern und Rechenhierarchie

$$17) \frac{2}{3} + \frac{3}{4} \cdot \frac{8}{9} = \frac{2}{3} + \frac{2}{3} = \boxed{\frac{4}{3}}$$

$$18) \left(\frac{2}{3} + \frac{3}{4} \right) \cdot \frac{8}{9} = \frac{17}{12} \cdot \frac{8}{9} = \boxed{\frac{34}{27}}$$

$$19) \frac{5}{6} - \left(\frac{1}{4} + \frac{2}{9} \right) = \frac{30}{36} - \frac{17}{36} = \boxed{\frac{13}{36}}$$

$$20) \left(\frac{7}{8} - \frac{1}{3} \right) : \frac{13}{12} = \frac{13}{24} \cdot \frac{12}{13} = \boxed{\frac{1}{2}}$$

$$21) \frac{3}{5} + \frac{2}{3} \cdot \left(\frac{9}{10} - \frac{1}{4} \right) = \frac{3}{5} + \frac{2}{3} \cdot \frac{13}{20} = \frac{18}{30} + \frac{13}{30} = \boxed{\frac{31}{30}}$$

$$22) \left[\frac{5}{6} - \left(\frac{1}{2} - \frac{1}{3} \right) \right]^2 = \left(\frac{5}{6} - \frac{1}{6} \right)^2 = \left(\frac{2}{3} \right)^2 = \boxed{\frac{4}{9}}$$

$$23) \frac{1}{2} + \frac{3}{4} \cdot \left(\frac{5}{6} - \frac{1}{3} \right) = \frac{1}{2} + \frac{3}{8} = \boxed{\frac{7}{8}}$$

$$24) \left(\frac{7}{9} - \frac{1}{6} \right) \cdot \left(\frac{3}{5} + \frac{9}{10} \right) = \frac{11}{18} \cdot \frac{3}{2} = \boxed{\frac{11}{12}}$$

$$25) \frac{5}{8} - \left[\frac{3}{4} - \frac{2}{3} \cdot \left(\frac{9}{10} - \frac{3}{5} \right) \right] = \frac{5}{8} - \left(\frac{3}{4} - \frac{1}{5} \right) = \boxed{\frac{3}{40}}$$

$$26) \left(\frac{2}{3} + \frac{5}{12} \right) : \frac{13}{8} - \frac{1}{7} = \frac{13}{12} \cdot \frac{8}{13} - \frac{1}{7} = \boxed{\frac{11}{21}}$$

$$27) \left(\frac{3}{5} \right)^2 + \frac{7}{10} : \left(\frac{5}{6} - \frac{1}{3} \right) = \frac{9}{25} + \frac{7}{5} = \boxed{\frac{44}{25}}$$

$$28) \left[1 - \left(\frac{3}{4} - \frac{2}{5} \right) \right] : \frac{13}{10} = \frac{13}{20} \cdot \frac{10}{13} = \boxed{\frac{1}{2}}$$

$$29) \frac{2}{3} \cdot \left[\frac{5}{4} - \left(\frac{7}{8} + \frac{1}{6} \right) \right] + \frac{1}{9} = \frac{2}{3} \cdot \frac{5}{24} + \frac{1}{9} = \boxed{\frac{1}{4}}$$

$$30) \left(\frac{11}{12} - \frac{2}{3}\right)^2 : \left(\frac{5}{8} - \frac{1}{2}\right) = \frac{1}{16} : \frac{1}{8} = \boxed{\frac{1}{2}}$$

$$31) \frac{3}{7} + \left\{ \frac{5}{6} - \left[\frac{1}{2} + \frac{3}{4} \cdot \left(\frac{2}{3} - \frac{2}{9} \right) \right] \right\} = \frac{3}{7} + \left(\frac{5}{6} - \frac{5}{6} \right) = \boxed{\frac{3}{7}}$$

$$32) \left[\frac{4}{5} : \frac{2}{3} - \left(\frac{7}{6} - \frac{1}{4} \right) \right] \cdot \frac{9}{13} = \left(\frac{6}{5} - \frac{11}{12} \right) \cdot \frac{9}{13} = \boxed{\frac{51}{260}}$$