

Mathematikaufgaben

> Algebra

> Bruchrechnung

Aufgabe: Führe die Division von zwei Brüchen durch:

a) $\frac{5}{8} : \frac{1}{8} = ?$

b) $\frac{11}{2} : \frac{5}{2} = ?$

c) $\frac{24}{4} : \frac{3}{8} = ?$

d) $\frac{5}{12} : \frac{5}{4} = ?$

e) $\frac{14}{5} : \frac{11}{10} = ?$

f) $\frac{13}{6} : \frac{5}{2} = ?$

g) $\frac{8}{7} : \frac{3}{4} = ?$

h) $\frac{7}{9} : \frac{1}{12} = ?$

i) $\frac{1}{8} : \frac{1}{20} = ?$

j) $\frac{15}{11} : \frac{6}{11} = ?$

k) $1\frac{4}{5} : 4 = ?$

l) $2\frac{5}{9} : 6 = ?$

m) $1 : \frac{4}{21} = ?$

n) $2\frac{1}{8} : \frac{11}{4} = ?$

o) $4\frac{2}{5} : 1\frac{1}{5} = ?$

p) $3\frac{5}{8} : 2\frac{1}{2} = ?$

q) $12\frac{1}{9} : \frac{13}{3} = ?$

r) $\frac{4}{5} : 1\frac{3}{10} = ?$

s) $\frac{2}{9} : \frac{16}{3} = ?$

t) $2\frac{7}{10} : 1\frac{4}{5} = ?$

Lösungen: Anwendung der Bruchgesetze (Kürzen der Brüche, Umwandlung von gemischten in unechte Brüche, Multiplikation mit dem Kehrwert, Kürzen zwischen den Brüchen, Multiplikation der Brüche, Kürzen des Ergebnisbruchs, Umwandlung von unechtem in gemischten Bruch) führt auf die folgenden Ergebnisse:

$$a) \frac{5}{8} : \frac{1}{8} = \frac{5}{8} \cdot \frac{8}{1} = \frac{5}{1} \cdot \frac{1}{1} = \frac{5}{1} = 5$$

$$b) \frac{11}{2} : \frac{5}{2} = \frac{11}{2} \cdot \frac{2}{5} = \frac{11}{1} \cdot \frac{1}{5} = \frac{11}{5} = 2\frac{1}{5}$$

$$c) \frac{24}{4} : \frac{3}{8} = \frac{6}{1} : \frac{3}{8} = \frac{6}{1} \cdot \frac{8}{3} = \frac{2}{1} \cdot \frac{8}{1} = \frac{16}{1} = 16$$

$$d) \frac{5}{12} : \frac{5}{4} = \frac{5}{12} \cdot \frac{4}{5} = \frac{1}{3} \cdot \frac{1}{1} = \frac{1}{3}$$

$$e) \frac{14}{5} : \frac{11}{10} = \frac{14}{5} \cdot \frac{10}{11} = \frac{14}{1} \cdot \frac{2}{11} = \frac{28}{11} = 2\frac{6}{11}$$

$$f) \frac{13}{6} : \frac{5}{2} = \frac{13}{6} \cdot \frac{2}{5} = \frac{13}{3} \cdot \frac{1}{5} = \frac{13}{15}$$

$$g) \frac{8}{7} : \frac{3}{4} = \frac{8}{7} \cdot \frac{4}{3} = \frac{32}{21} = 1\frac{11}{21}$$

$$h) \frac{7}{9} : \frac{1}{12} = \frac{7}{9} \cdot \frac{12}{1} = \frac{7}{3} \cdot \frac{4}{1} = \frac{28}{3} = 9\frac{1}{3}$$

$$i) \frac{1}{8} : \frac{1}{20} = \frac{1}{8} \cdot \frac{20}{1} = \frac{1}{2} \cdot \frac{5}{1} = \frac{5}{2} = 2\frac{1}{2}$$

$$j) \frac{15}{11} : \frac{6}{11} = \frac{15}{11} \cdot \frac{11}{6} = \frac{5}{1} \cdot \frac{1}{2} = \frac{5}{2} = 2\frac{1}{2}$$

$$k) 1\frac{4}{5} : 4 = \frac{9}{5} : \frac{4}{1} = \frac{9}{5} \cdot \frac{1}{4} = \frac{9}{20}$$

$$l) 2\frac{5}{9} : 6 = \frac{23}{9} : \frac{6}{1} = \frac{23}{9} \cdot \frac{1}{6} = \frac{23}{54}$$

$$m) 1 : \frac{4}{21} = \frac{1}{1} : \frac{4}{21} = \frac{1}{1} \cdot \frac{21}{4} = \frac{21}{4} = 5\frac{1}{4}$$

$$n) 2\frac{1}{8} : \frac{11}{4} = \frac{17}{8} : \frac{11}{4} = \frac{17}{8} \cdot \frac{4}{11} = \frac{17}{2} \cdot \frac{1}{11} = \frac{17}{22}$$

$$o) 4\frac{2}{5} : 1\frac{1}{5} = \frac{22}{5} : \frac{6}{5} = \frac{22}{5} \cdot \frac{5}{6} = \frac{11}{1} \cdot \frac{1}{3} = \frac{11}{3} = 3\frac{2}{3}$$

$$p) 3\frac{5}{8} : 2\frac{1}{2} = \frac{29}{8} : \frac{5}{2} = \frac{29}{8} \cdot \frac{2}{5} = \frac{29}{4} \cdot \frac{1}{5} = \frac{29}{20} = 1\frac{9}{20}$$

$$q) 12\frac{1}{9} : \frac{13}{3} = \frac{109}{9} : \frac{13}{3} = \frac{109}{9} \cdot \frac{3}{13} = \frac{109}{3} \cdot \frac{1}{13} = \frac{109}{39} = 2\frac{31}{39}$$

$$r) \frac{4}{5} : 1\frac{3}{10} = \frac{4}{5} : \frac{13}{10} = \frac{4}{5} \cdot \frac{10}{13} = \frac{4}{1} \cdot \frac{2}{13} = \frac{8}{13}$$

$$s) \frac{2}{9} : \frac{16}{3} = \frac{2}{9} \cdot \frac{3}{16} = \frac{1}{3} \cdot \frac{1}{8} = \frac{1}{24}$$

$$t) 2\frac{7}{10} : 1\frac{4}{5} = \frac{27}{10} : \frac{9}{5} = \frac{27}{10} \cdot \frac{5}{9} = \frac{3}{2} \cdot \frac{1}{1} = \frac{3}{2} = 1\frac{1}{2}$$