

MB 1 LU 8 MB 2 LU 4 Bruchrechnen mit Variablen

Aufgaben:

Lösungen nach hinten falten!

1. a)  $\frac{25}{72} + \frac{31}{72} - \frac{55}{72}$

b)  $\frac{6a}{x} - \frac{a}{x} - \frac{11a}{x} + \frac{7a}{x}$

2. a)  $\frac{5}{6} + \frac{7}{24}$

b)  $\frac{7}{10} - \frac{8}{15}$

c)  $\frac{a}{2} + \frac{a}{3}$

g)  $\frac{b}{2c} - \frac{5b}{6c}$

h)  $\frac{5u}{6x} - \frac{3v}{8x} + \frac{4v}{5x} + \frac{7u}{12x} - \frac{u}{60x}$

3. a)  $\frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}$

b)  $\frac{4}{x} - \frac{2}{x^2} + \frac{1}{2x}$

c)  $\frac{1}{ax} - \frac{a}{2x} + \frac{1}{ax^2}$

d)  $\frac{3}{u} + \frac{4}{v} - \frac{5}{w}$

e)  $\frac{5z}{xy} + \frac{5z}{yz} + \frac{5z}{xz}$

f)  $\frac{5}{2x^2} + \frac{8}{3x^3} + \frac{7}{4x^4}$

4. a)  $\frac{a}{b} \cdot \frac{c}{d}$

b)  $\frac{ab}{c} \cdot \frac{d}{e}$

5. a)  $\frac{a^2}{b} \cdot \frac{c^2}{ad}$

b)  $\frac{x^2y}{az} \cdot \frac{ax}{z}$

6. a)  $\frac{a}{b} : \frac{c}{d}$

b)  $\frac{ab}{c} : \frac{d}{e}$

7. a)  $\frac{a^2}{2b} : \frac{b^2}{3c}$

b)  $\frac{2e^3}{3f} : \frac{4e^2}{5f}$

c)  $\frac{ab}{c} \cdot \frac{d}{ef}$

d)  $\frac{ab}{cd} \cdot \frac{ef}{g}$

c)  $\frac{a^2}{2b} \cdot \frac{c^2}{3a^2}$

d)  $\frac{e^3}{3f} \cdot \frac{f^2}{4e}$

c)  $\frac{a^2b}{c} : \frac{de^2}{f}$

d)  $\frac{ab}{c^2} : \frac{d^2}{ef}$

c)  $\frac{3p^2}{5q^3} : \frac{18p}{35q^2}$

d)  $\frac{8x^2y}{21z} : \frac{4xy^2}{7z^2}$

1. a)  $\frac{1}{72}$

b)  $\frac{a}{x}$

(wir bevorzugen  $\frac{9}{8}$  statt  $1\frac{1}{8}$ )

2. a)  $\frac{27}{24} = \frac{9}{8}$

b)  $\frac{5}{30} = \frac{1}{6}$

c)  $\frac{5a}{6}$

g)  $\frac{-2b}{6c} = -\frac{b}{3c}$

h)  $\frac{168u+51v}{120x} = \frac{56u+17v}{40x}$

3. a)  $\frac{x^2+x+1}{x^3}$

b)  $\frac{9x-4}{2x^2}$

c)  $\frac{2x-a^2x+2}{2ax^2}$

d)  $\frac{3vw+4uw-5uv}{uvw}$

e)  $\frac{5xz+5yz+5z^2}{xyz}$

f)  $\frac{30x^2+32x+21}{12x^4}$

4. a)  $\frac{ac}{bd}$

b)  $\frac{abd}{ce}$

5. a)  $\frac{ac^2}{bd}$

b)  $\frac{x^3y}{z^2}$

6. a)  $\frac{ad}{bc}$

b)  $\frac{abe}{cd}$

7. a)  $\frac{3a^2c}{2b^3}$

b)  $\frac{5e}{6}$

c)  $\frac{abd}{cef}$

d)  $\frac{abef}{cdg}$

c)  $\frac{c^2}{6b}$

d)  $\frac{e^2f}{12}$

c)  $\frac{a^2bf}{cde^2}$

d)  $\frac{abef}{c^2d^2}$

c)  $\frac{7p}{6q}$

d)  $\frac{2xz}{3y}$

## Aufgaben

## Lösungen nach hinten falten!

8. a)  $b \cdot \frac{c}{d}$

b)  $2x \cdot \frac{3}{y}$

c)  $m \cdot \frac{10m}{11n}$

g)  $\frac{x^4}{y^5} \cdot 3y^3$

h)  $\frac{35}{36} \cdot 6z^3$

i)  $\frac{1}{17ab} \cdot 17b$

d)  $\frac{t}{13} \cdot t^2$

e)  $3y \cdot \frac{4y}{15}$

f)  $\frac{19r}{20s} \cdot 10rs$

k)  $21w \cdot \frac{23v}{28w^2}$

l)  $1000 \cdot \frac{99u}{100t}$

m)  $75cd \cdot \frac{13c^2}{50d^3}$

8. a)  $\frac{bc}{d}$

b)  $\frac{6x}{y}$

c)  $\frac{10m^2}{11n}$

g)  $\frac{3x^4}{y^2}$

h)  $\frac{35z^3}{6}$

i)  $\frac{1}{a}$

d)  $\frac{t^3}{13}$

e)  $\frac{4y^2}{5}$

f)  $\frac{19r^2}{2}$

k)  $\frac{69v}{4w}$

l)  $\frac{990u}{t}$

m)  $\frac{39c^3}{2d^2}$

9. a)  $\frac{b}{c} : d$

b)  $\frac{2x}{3} : y$

10. a)  $\frac{x^3}{4y^2} : 3x^2$

b)  $\frac{9u^2}{16t^3} : 2u$

c)  $\frac{10p}{11q} : r$

d)  $\frac{15r}{19s} : 3r$

c)  $\frac{25a^2b}{49c^2} : 15ab^2$

d)  $\frac{49r^2}{64s^2} : 14rs$

9. a)  $\frac{b}{cd}$

b)  $\frac{2x}{3y}$

10. a)  $\frac{x}{12y^2}$

b)  $\frac{9u}{32t^3}$

c)  $\frac{10p}{11qr}$

d)  $\frac{5}{19s}$

c)  $\frac{5a}{147bc^2}$

d)  $\frac{7r}{128s^3}$

11. a)  $\frac{\frac{9}{13}}{\frac{15}{26}} = \frac{9}{13} : \frac{15}{26}$

b)  $\frac{\frac{32}{55}}{\frac{8}{11}}$

e)  $\frac{1}{1 + \frac{1}{2}}$

f)  $\frac{\frac{a^2b}{c}}{\frac{ab^2}{c^2}}$

c)  $\frac{\frac{6}{5}}{\frac{5}{6}}$

d)  $\frac{1}{\frac{1}{2}} = 1 : \frac{1}{2}$

g)  $\frac{\frac{6p^2q}{5rs^2}}{\frac{18pq^2}{25r^2s}}$

h)  $\frac{\frac{12x^3y}{35z^2}}{\frac{8x^2y^2}{21z}}$

11. a)  $\frac{6}{5}$

b)  $\frac{4}{5}$

e)  $\frac{2}{3}$

f)  $\frac{ac}{b}$

c)  $\frac{36}{25}$

d) 2

g)  $\frac{5pr}{3qs}$

h)  $\frac{9x}{10yz}$