

a.)  $\frac{36ab^2}{-12a^2b^2}$

b.)  $\frac{9n^3}{3n^9}$

c.)  $\frac{-5x}{-5x^5}$

d.)  $\frac{(xy)^2}{-x^3y}$

e.)  $\frac{2ab^2}{(a^2b)^2}$

f.)  $\frac{-2ab^2}{a(-2b)^2}$

g.)  $\frac{(2a^3)^4}{(4a^2)^3}$

h.)  $\frac{-3ab}{6ab-9}$

i.)  $\frac{3x^2-x}{1-3x}$

j.)  $\frac{2a^2-2a}{a^2-a^3}$

k.)  $\frac{9b^2-4}{3b-2}$

l.)  $\frac{x^2+y^2}{(x+y)^2}$

m.)  $\frac{4a^2-4}{(a+1)(a-1)}$

n.)  $\frac{-(yz)^4}{y(-z)^4}$

o.)  $\frac{(3z)^2}{4} \cdot \frac{5}{-2z} \cdot \frac{-(2z)^2}{15}$

p.)  $\frac{11+b}{b^2-121}$

q.)  $\frac{m^3-m^2n}{m^2n-mn^2}$

r.)  $\frac{x^2-1}{x^2-2x+1}$

s.)  $\frac{1-x^2}{x-x^2}$

t.)  $\frac{k^2-k-6}{k^2-5k+6}$

1. Kürze:

$$\text{a.) } \frac{-(3y)^2}{(-2x)^4} \cdot \frac{4x^2}{-2y^3} =$$

$$\text{b.) } \frac{(-2a^2b^3)^4}{-(5a^4b^3)^2} =$$

$$\text{c.) } \frac{2-2x^2}{4x-4} =$$

$$\text{d.) } \frac{b^2-6b+8}{4b} \cdot \frac{2b^2-2b}{b^2-3b+2} =$$

2. Vereinfache:

$$\text{a.) } \frac{x^2+1}{x-1} - \frac{x+1}{x-1} =$$

$$\text{b.) } \frac{1}{x} + \frac{2}{x^2} - \frac{3}{x^3} =$$

$$\text{c.) } \frac{7x}{x-4} - \frac{6x}{x-3} =$$

$$\text{d.) } \frac{a}{a^2-1} - \frac{1}{2a-2} =$$

$$\text{e.) } 2 - \frac{1+2a}{a-1} + \frac{2}{a} =$$

$$\text{f.) } \frac{x}{x^2-1} + \frac{2}{x^2-2x-3} =$$

$$1. \quad \frac{x^2+3}{x-1} - \frac{(x+1)^2}{x-1} =$$

$$2. \quad \frac{a}{a-2} - \frac{a^2+4}{a^2-4} =$$

$$3. \quad \frac{2x}{x+2} - \frac{16}{x^2-4} =$$

$$4. \quad \frac{a}{a-b} - \frac{b}{a+b} - 1 =$$

$$5. \quad \frac{x+2}{x^2-2x} - \frac{8}{x^2-4} =$$

$$6. \quad \frac{1}{a^2-9} - \frac{1}{a^2-3a} - \frac{1}{3a} =$$

$$7. \quad \frac{x+5}{x-4} - \frac{x-4}{x+5} - \frac{12x-21}{x^2+x-20} =$$

$$8. \quad \frac{1}{5a+10} - \frac{1}{2a^2-6a} + \frac{1}{a^2-a-6} =$$

$$1. \quad \frac{x-y}{5} - \frac{x+y}{5} =$$

$$2. \quad \frac{x-y-z}{3} - \frac{y-x-z}{3} - \frac{z-x-y}{3} =$$

$$3. \quad \frac{2}{3x} - \frac{3}{2x} + 1 =$$

$$4. \quad \frac{1}{a} + \frac{1}{a^2} - \frac{1}{a^3} =$$

$$5. \quad \frac{2}{ax} + \frac{1}{x^2} - \frac{3}{2a} =$$

$$6. \quad \frac{1}{2a-3} - \frac{1}{9-6a} - \frac{1}{4a-6} =$$

$$7. \quad \frac{a+1}{a-1} - \frac{a^2}{a^2-1} - \frac{1}{2a+2} =$$

$$8. \quad \frac{2x^2 + 2y^2}{x^2 - y^2} - \frac{x+y}{x-y} =$$

$$9. \quad \frac{z}{z-1} + \frac{1}{2z^2-2} - 1 =$$

$$10. \quad \frac{a^2}{a^2-b^2} - \frac{b}{2a-2b} =$$