

Üben!

a)

$$\begin{aligned}-(ab)^2 &= -(ab) \cdot (ab) \\ &= -(a \cdot a \cdot b \cdot b) \\ &= -(a^2b^2) \\ &= \underline{\underline{-a^2b^2}}\end{aligned}$$

b)

$$\begin{aligned}(ab)^2 &= (ab) \cdot (ab) \\ &= a \cdot a \cdot b \cdot b \\ &= \underline{\underline{a^2b^2}}\end{aligned}$$

c)

$$\begin{aligned}-(ac)^3 &= -(a^3c^3) \\ &= \underline{\underline{-a^3c^3}}\end{aligned}$$

d)

$$\begin{aligned}(2cd)^3 &= 2^3c^3d^3 \\ &= \underline{\underline{8c^3d^3}}\end{aligned}$$

e)

$$\begin{aligned} -(-2ad)^3 &= -[(-1) \cdot 2ad]^3 \\ &= -[(-1)^3 \cdot 2^3 a^3 d^3] \\ &= -[-1 \cdot 8a^3 d^3] \\ &= -[-8a^3 d^3] \\ &= \underline{\underline{8a^3 d^3}} \end{aligned}$$

f)

$$\begin{aligned} (-2bc)^3 &= [(-1) \cdot 2bc]^3 \\ &= [(-1)^3 \cdot 2^3 b^3 c^3] \\ &= [-1 \cdot 8b^3 c^3] \\ &= \underline{\underline{-8b^3 c^3}} \end{aligned}$$

a)

$$\begin{aligned} [a \cdot (-b)]^5 &= [-ab]^5 \\ &= [(-1)^5 a^5 b^5] \\ &= [-a^5 b^5] \\ &= \underline{\underline{-a^5 b^5}} \end{aligned}$$

b)

$$\begin{aligned} & 8x^4 - 7x^5 + 2x^4 - 3x^5 \\ &= -7x^5 - 3x^5 + 8x^4 + 2x^4 \\ &= -10x^5 + 10x^4 \\ &= \underline{\underline{-10(x^5 - x^4)}} \end{aligned}$$

c)

$$\begin{aligned} & 7x^5 - 3y^5 + x^5 - 2y^5 \\ &= 7x^5 + x^5 - 3y^5 - 2y^5 \\ &= \underline{\underline{8x^5 - 5y^5}} \end{aligned}$$

d)

$$\begin{aligned} & 5a^m - 2a^n - 3a^n + 4a^m \\ &= 5a^m + 4a^m - 2a^n - 3a^n \\ &= \underline{\underline{9a^m - 5a^n}} \end{aligned}$$

a)

$$\begin{aligned} 1\frac{3}{4}x^4 \cdot 8xy^2 &= \frac{7}{4} \cdot \frac{8}{1} \cdot x^4 \cdot x \cdot y^2 \\ &= \frac{56}{4}x^5y^2 \\ &= \underline{\underline{14x^5y^2}} \end{aligned}$$

b)

$$\begin{aligned} & b^{n-1} \cdot b^{n+1} \cdot b^{3-2n} \\ &= b^{n-1+n+1+3-2n} \\ &= b^{n+n-2n-1+1+3} \\ &= \underline{\underline{b^3}} \end{aligned}$$

c)

$$\begin{aligned} & c^{4x-5} \cdot c^{8-3x} \cdot c^{2x-3} \\ &= c^{4x-5+8-3x+2x-3} \\ &= c^{4x-3x+2x-5+8-3} \\ &= \underline{\underline{c^{3x}}} \end{aligned}$$

d)

$$\begin{aligned} & 128 \cdot 2^{n-7} \\ &= 2^7 \cdot 2^{n-7} \\ &= 2^{7+n-7} \\ &= \underline{\underline{2^n}} \end{aligned}$$

a)

$$\begin{aligned}\frac{a^5b^7}{a^2b^4} &= a^5b^7a^{-2}b^{-4} \\ &= a^5 \cdot a^{-2} \cdot b^7 \cdot b^{-4} \\ &= a^{5-2} \cdot b^{7-4} \\ &= \underline{\underline{a^3 \cdot b^3}}\end{aligned}$$

b)

$$\begin{aligned}\frac{3b^7}{5b^3} &= \frac{3}{5} \cdot b^7 \cdot b^{-3} \\ &= \frac{3}{5} \cdot b^{7-3} \\ &= \underline{\underline{\frac{3}{5}b^4}}\end{aligned}$$

c)

$$\begin{aligned}\frac{a^{n+1}}{a^n} &= a^{n+1} \cdot a^{-n} \\ &= a^{n+1-n} \\ &= a^1 \\ &= \underline{\underline{a}}\end{aligned}$$

d)

$$\begin{aligned}\frac{c^{3+x}}{c^{3-x}} &= c^{3+x} \cdot c^{-(3-x)} \\ &= c^{3+x} \cdot c^{-3+x} \\ &= c^{3+x-3+x} \\ &= \underline{\underline{c^{2x}}}\end{aligned}$$

e)

$$\begin{aligned}\frac{a^7}{a^3} &= a^7 \cdot a^{-3} \\ &= a^{7-3} \\ &= \underline{\underline{a^4}}\end{aligned}$$

f)

$$\begin{aligned}\frac{a^3x^5}{ax^4} &= a^3 \cdot x^5 \cdot a^{-1} \cdot x^{-4} \\ &= a^3 \cdot a^{-1} \cdot x^5 \cdot x^{-4} \\ &= \underline{\underline{a^2x}}\end{aligned}$$

g)

$$\begin{aligned}\frac{a^n}{a^{n-1}} &= a^n \cdot a^{-(n-1)} \\ &= a^n \cdot a^{-n+1} \\ &= a^{n-n+1} \\ &= \underline{\underline{a}}\end{aligned}$$

h)

$$\begin{aligned}\frac{c^{3x}}{c^{x-3}} &= c^{3x} \cdot c^{-(x-3)} \\ &= c^{3x} \cdot c^{-x+3} \\ &= c^{3x-x+3} \\ &= \underline{\underline{c^{2x+3}}}\end{aligned}$$