

Aufg. ①

$$a) \frac{(-8)^2 \cdot 4^5}{2^3 \cdot 16^2 \cdot (0,5)^{-2}} = \frac{8^2 \cdot (2^2)^5}{2^3 \cdot (2^4)^2 \cdot \left(\frac{1}{2}\right)^{-2}} = \frac{\binom{3}{2}^2 \cdot 2^{10}}{2^3 \cdot 2^8 \cdot 2^2} = \frac{2^6 \cdot 2^{10}}{2^{13}}$$

$$= \frac{2^{16}}{2^{13}} = 2^3$$

$$b) \frac{9^{-10} \cdot 81^4}{27^{-5} \cdot \left(\frac{1}{3}\right)^{-7}} = \frac{\binom{2}{3}^{-10} \cdot \binom{4}{3}^4}{\binom{3}{3}^{-5} \cdot 3^7} = \frac{3^{-20} \cdot 3^{16}}{3^{-15} \cdot 3^7} = \frac{3^{-4}}{3^{-8}} = 3^4$$

Agk. ②

$$A_v \quad \boxed{x+y=3} \quad A=j \quad \text{or}$$

$$A = 2(5x-4y) - 3(x-7y) - 6y$$

$$\text{Lösung!} \quad A = 10x - \underline{8y} - 3x + \underline{21y} - \underline{6y}$$

$$= 7x + 7y = 7 \cdot (x+y) = 7 \cdot 3 = 21$$

Ap_a

$$\boxed{A = 21}$$

Α 6κ. 3

Αν οι αριθμοί x και y είναι αντίθετοι και οι αριθμοί a και β είναι αντίστροφοι, να υπολογίσετε την τιμή της παράστασης:

$$A = 6 \cdot (x - a) - a \cdot (\beta - 6) - 2 \cdot [5 - 3 \cdot (y - 4)]$$

$$x + y = 0$$

$$a \cdot \beta = 1$$

Λύση: $A = 6x - 6a - a\beta + 6a - 2 \cdot (5 - 3y + 12)$

$$= 6x - \cancel{6a} - a\beta + \cancel{6a} - 2 \cdot (-3y + 17)$$

$$= 6x - a\beta + 6y - 34 = 6x + 6y - a \cdot \beta - 34$$

$$= 6 \cdot (x + y) - a \cdot \beta - 34 = 6 \cdot 0 - 1 - 34 = -1 - 34 = -35$$

$$A = -35$$

Ans. (4)

$$A = \frac{s^{11} \cdot s^{-9}}{s^3 \cdot s^6} : [(s^{-3})^{-5} \cdot (s^{-4})^6] = \frac{s^2}{s^9} : [s^{15} \cdot s^{-24}]$$

$$= s^{-7} : s^{-9} = s^2 = 25$$

Ans. (5)

$$A = \frac{3}{4}x + \frac{5}{8}y + \frac{7}{2}x + \frac{1}{4}y = \frac{6}{8}x + \frac{5}{8}y + \frac{28}{8}x + \frac{2}{8}y$$

$$= \frac{34}{8}x + \frac{7}{8}y = \frac{34x + 7y}{8}$$

Agr. ⑥

Av

$$x - y = 7$$

$$x - y = -(y - x)$$

$$A = 7 \cdot (y - x) - 3 \cdot [y - 2 \cdot (5 - x)] - 9 \cdot (8 - x)$$

Lösung: $A = 7y - 7x - 3 \cdot (y - 10 + 2x) - 72 + 9x$

$$= \underline{7y} - \underline{7x} - \underline{3y} + 30 - \underline{6x} - 72 + \underline{9x}$$

$$= 4y - 4x - 42 = -4x + 4y - 42 = \underline{-4} \cdot x - \underline{4} \cdot (-y) - 42$$

$$= -4 \cdot (x - y) - 42 = -4 \cdot 7 - 42 = \boxed{-70}$$