

1. Stegreifaufgabe aus der Mathematik

Klasse 10

- Lösungen -

$$1a) \quad 4a^{2n+2} - 9a^2b^2 = 4a^{2n}a^2 - 9a^2b^2 = \underline{\underline{a^2(4a^{2n} - 9b^2)}}$$

$$1b) \quad a^{n+2} + 2a^{n+1} + a^n = a^n(a^2 + 2a + 1) = \underline{\underline{a^n(a+1)^2}}$$

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

$$\frac{a^n \cdot a \cdot b^2}{a^n \cdot a^n \cdot b^n} + \frac{1}{a^n \cdot b^n} - \frac{b \cdot a \cdot b}{a^n \cdot b^n} =$$

$$\frac{ab^2 + 1 - ab^2}{a^n \cdot b^n} = \underline{\underline{\frac{1}{(ab)^n}}}$$

$$3. \quad \frac{(cb)^m}{a^k} : \left[\left(\frac{a^{k-1} \cdot c^{2m-3}}{b^{m+3}} \right)^2 \cdot \left(\frac{b^{m+2}}{a^k \cdot c^{m-2}} \right)^3 \right] =$$

$$\frac{c^m \cdot b^m}{a^k} : \left[\frac{a^{2k-2} \cdot c^{4m-6}}{b^{2m+6}} \cdot \frac{b^{3m+6}}{a^{3k} \cdot c^{3m-6}} \right] =$$

$$\frac{c^m \cdot b^m}{a^k} : \frac{a^{2k-2} \cdot c^{4m-6} \cdot b^{3m+6}}{b^{2m+6} \cdot a^{3k} \cdot c^{3m-6}} =$$

$$\frac{c^m \cdot b^m}{a^k} : \frac{b^{3m+6-2m-6} \cdot c^{4m-6-3m+6}}{a^{3k-2k+2}} =$$

$$\frac{c^m \cdot b^m}{a^k} : \frac{b^m \cdot c^m}{a^{k+2}} =$$

$$\frac{c^m \cdot b^m \cdot a^{k+2}}{a^k \cdot b^m \cdot c^m} =$$

$$\frac{a^{k+2}}{a^k} = \underline{\underline{a^2}}$$