Hausaufgaben 4.9.2009 VKA

Lösungen:

1	Bitte berechnen Sie a) $(11vy^2 - 1)^2$ | L: $121v^2y^4 - 22vy^2 + 1$ b) $(-2j^2 - 5f)^2$ | L: $4j^4 + 20fj^2 + 25f^2$ c) $(5b + 7bm^2)^2$ | L: $25b^2 + 70b^2m^2 + 49b^2m^4$ d) $(9eh^2 + 8h)^2$ | L: $81e^2h^4 + 144eh^3 + 64h^2$ e) $(-3r - 1)^2$ | L: $9r^2 + 6r + 1$
2	Bitte berechnen Sie a) $(-3g + 2)(-g + 10)$ **| L: $3g^2 - 32g + 20$** b) $(12s^2 + 11r)(-5r^2 - 2r^2s^2)$ **| L: $-60r^2s^2 - 24r^2s^4 - 55r^3 - 22r^3s^2$** c) $(-11b^2k^2 - 4)(-5b^2k - 1)$ **| L: $55b^4k^3 + 11b^2k^2 + 20b^2k + 4$** d) $(3y^2 - 1)(-9y + 7)(5y^2 + 6y)$ **| L: $-135y^5 - 57y^4 + 171y^3 + 19y^2 - 42y$** e) $(-x^2 + 12b^2w^2 - 8)(v^2 - 5s - 8ah^2)$ **| L: $-v^2x^2 + 5sx^2 + 8ah^2x^2 + 12b^2v^2w^2 - 60b^2sw^2 - 96ab^2h^2w^2 - 8v^2 + 40s + 64ah^2$** f) $(-8e^2s + 11c^2 + 8)(4g^2w^2 + g - 10)$ **| L: $-32e^2g^2sw^2 - 8e^2gs + 80e^2s + 44c^2g^2w^2 + 11c^2g - 110c^2 + 32g^2w^2 + 8g - 80$**
3	Bitte berechnen Sie a) $\frac{(-\frac{-4}{9}+\frac{-3}{-8})*\frac{5}{-9}}{(-\frac{1}{-8}+\frac{1}{-8})*\frac{7}{6}}$ | L: Kein Wert b) $\frac{\frac{6}{7}*\frac{-7}{-10}*\frac{1}{-10}*\frac{8}{-7}}{\frac{7}{5}*\frac{-8}{3}*\frac{-1}{-10}*\frac{5}{-9}}$ | L: $\frac{81}{245}$ c) $\frac{\frac{-9}{-5}*\frac{1}{-9}*\frac{9}{2}*\frac{-9}{-4}}{\frac{3}{-2}*\frac{-7}{-8}*\frac{-5}{4}*\frac{-4}{3}}$ | L: $\frac{162}{175}$ d) $\frac{(-\frac{5}{9}-\frac{9}{5})*\frac{-3}{-10}}{(-\frac{-9}{-7}-\frac{-5}{-8})*\frac{-1}{6}}$ | L: $-\frac{5936}{2675}$ e) $\frac{(-\frac{-3}{7}+\frac{7}{6})*\frac{1}{2}}{(\frac{7}{4}-\frac{1}{-9})*\frac{-9}{-2}}$ | L: $\frac{2}{21}$

4 Bitte berechnen Sie

a)

$$\frac{r+1}{11f-7} - \frac{-9r-2p}{4e-r}$$

L :

$$\frac{r+1}{11f-7} - \frac{-9r-2p}{4e-r} = \frac{-64r+4er-r^2+4e+99fr+22fp-14p}{44ef-11fr-28e+7r}$$

b)

$$\frac{-3w+m}{-3f-11} + \frac{-6j-5}{e-6}$$

L :

$$\frac{-3w+m}{-3f-11} + \frac{-6j-5}{e-6} = \frac{-3ew+18w+em-6m+18fj+15f+66j+55}{-3ef+18f-11e+66}$$

c)

$$\frac{b-4u}{11q+7} + \frac{-11z+8}{9c-11}$$

L :

$$\frac{b-4u}{11q+7} + \frac{-11z+8}{9c-11} = \frac{9bc-11b-36cu+44u-121qz+88q-77z+56}{99cq-121q+63c-77}$$

d)

$$\frac{5q-7}{e-2j} + \frac{9g-2w}{-9a-4}$$

L :

$$\frac{5q-7}{e-2j} + \frac{9g-2w}{-9a-4} = \frac{-45aq-20q+63a+28+9eg-2ew-18gj+4jw}{-9ae-4e+18aj+8j}$$