Hausaufgaben 4.9.2008 M1

Lösungen:

1	Was war die binomische Formel? a) $50{,}41u^2 + 65{,}32u + 21{,}16$ | L: $(7{,}1u + 4{,}6)^2$ [1. BF] b) $64j^2 - 83{,}2j + 27{,}04$ | L: $(8j - 5{,}2)^2$ [2. BF] c) $47{,}61r^2 - 97{,}98r + 50{,}41$ | L: $(6{,}9r - 7{,}1)^2$ [2. BF] d) $44{,}89g^2 - 1{,}21q^2$ | L: $(6{,}7g + 1{,}1q)(6{,}7g - 1{,}1q)$ [3. BF] e) $50{,}41e^2 - 60{,}84$ | L: $(7{,}1e + 7{,}8)(7{,}1e - 7{,}8)$ [3. BF] f) $62{,}41f^2 - 96{,}38f + 37{,}21$ | L: $(7{,}9f - 6{,}1)^2$ [2. BF] g) $5{,}76i^2 - 38{,}44a^2$ | L: $(2{,}4i + 6{,}2a)(2{,}4i - 6{,}2a)$ [3. BF] h) $53{,}29d^2 - 64{,}24d + 19{,}36$ | L: $(7{,}3d - 4{,}4)^2$ [2. BF] i) $3{,}61p^2 + 11{,}02pz + 8{,}41z^2$ | L: $(1{,}9p + 2{,}9z)^2$ [1. BF] j) $21{,}16a^2 + 22{,}08a + 5{,}76$ | L: $(4{,}6a + 2{,}4)^2$ [1. BF]
2	Bitte rechnen Sie aus: a) $\frac{1,6i + 3,2}{6,3o - 2,7} - \frac{-5,6n + 4,6}{4,1u + 6,4}$ L : $\frac{1,6i + 3,2}{6,3o - 2,7} - \frac{-5,6n + 4,6}{4,1u + 6,4} = \frac{32,9 + 6,56iu + 10,24i + 13,12u + 35,28no - 28,98o - 15,12n}{25,83ou + 40,32o - 11,07u - 17,28}$ b) $\frac{-7,3z + 3,4}{-6,8h - 4,6} + \frac{2,4r + 7,5}{-4,4g + 3,3}$ L : $\frac{-7,3z + 3,4}{-6,8h - 4,6} + \frac{2,4r + 7,5}{-4,4g + 3,3} = \frac{-23,28 + 32,12gz - 24,09z - 14,96g - 16,32hr - 51h - 11,04r}{29,92gh - 22,44h + 20,24g - 15,18}$ c) $\frac{3f + 1,8h}{-1,3x + 2,5y} - \frac{8a - 5,4v}{1,4m - 3,3a}$ L : $\frac{3f + 1,8h}{-1,3x + 2,5y} - \frac{8a - 5,4v}{1,4m - 3,3a} = \frac{4,2fm - 9,9af + 2,52hm - 5,94ah + 10,4ax - 7,02vx - 20ay + 13,5vy}{-1,82mx + 4,29ax + 3,5my - 8,25ay}$

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3 Bitte kürzen Sie:

a)

$$\frac{-35g^2in^2s + 15g^2ns}{10f^2g^2nsuy^2 - 5g^2ns}$$

L :

$$\frac{-35g^2in^2s + 15g^2ns}{10f^2g^2nsuy^2 - 5g^2ns} = \frac{-7in + 3}{2f^2uy^2 - 1} \quad [5g^2ns]$$

b)

$$\frac{7gu + 3u}{2gu - u}$$

L :

$$\frac{7gu + 3u}{2gu - u} = \frac{7g + 3}{2g - 1} \quad [u]$$

c)

$$\frac{-8g^3p^2t^2z^2 + 5g^2p^2t^2}{-6g^2m^2p^2t^2 - 7a^2g^2o^2p^2t^2v + 3g^2p^2t^2w^2}$$

L :

$$\frac{-8g^3p^2t^2z^2 + 5g^2p^2t^2}{-6g^2m^2p^2t^2 - 7a^2g^2o^2p^2t^2v + 3g^2p^2t^2w^2} = \frac{-8gz^2 + 5}{-6m^2 - 7a^2o^2v + 3w^2} \quad [g^2p^2t^2]$$

4 Bitte bringen Sie's in die Form $(\square+\square)(\square+\square)$

a) $14u^2 + 11u + 2$ | L: $(2u + 1)(7u + 2)$
b) $21j^2 + 8j - 4$ | L: $(7j - 2)(3j + 2)$
c) $-8k^2 + 7k - 8dk + 7d$ | L: $(-k - d)(8k - 7)$
d) $-24w^2 + 73w - 24$ | L: $(-8w + 3)(3w - 8)$
e) $-12e^2 + 5e + 3$ | L: $(4e - 3)(-3e - 1)$

5 Finden Sie bitte die quadratische Ergänzung

a) $16o^2 - 8o$ | L: $16o^2 - 8o + 1 = (4o - 1)^2$
b) $9k^2 - 24ky$ | L: $9k^2 - 24ky + 16y^2 = (3k - 4y)^2$
c) $64h^2 - 112h$ | L: $64h^2 - 112h + 49 = (8h - 7)^2$
d) $36y^2 - 12fy$ | L: $36y^2 - 12fy + f^2 = (6y - f)^2$
e) $d^2 + 4d$ | L: $d^2 + 4d + 4 = (d + 2)^2$