

Lösungen:

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Punkte |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 1 | <p>Bitte berechnen Sie</p> <p>a)</p> $-\frac{\frac{-9}{5} * \frac{-6}{-7} * \frac{3}{10} * \frac{5}{-6}}{\frac{4}{-5} * \frac{10}{-3} * \frac{1}{10} * \frac{-9}{2}} \quad \text{L:} \quad \frac{9}{28}$ <p>b)</p> $\frac{\frac{2}{-5} * \frac{1}{-6} * \frac{-5}{-4} * \frac{9}{-8} * \frac{-9}{5} * \frac{-3}{5}}{\frac{-5}{-4} * \frac{-9}{-2} * \frac{2}{-7} * \frac{8}{-3} * \frac{3}{10} * \frac{-9}{5}} \quad \text{L:} \quad \frac{7}{160}$ <p>c)</p> $\frac{\left(-\frac{5}{2} - \frac{1}{3}\right) * \frac{8}{-9}}{\left(-\frac{9}{-2} - \frac{-7}{-10}\right) * \frac{-3}{10}} \quad \text{L:} \quad -\frac{100}{81}$ <p>d)</p> $\frac{\left(\frac{3}{-2} + \frac{1}{4} - \frac{-5}{4} + \frac{-4}{5}\right) * \left(-\frac{-3}{2} - \frac{5}{2} - \frac{-1}{2} - \frac{-2}{3}\right)}{\left(\frac{-5}{3} + \frac{5}{-4} + \frac{-2}{3} + \frac{-1}{-3}\right) * \left(-\frac{-1}{3} + \frac{-1}{-4} + \frac{1}{4} + \frac{-2}{3}\right)} \quad \text{L:} \quad \frac{16}{15}$ | 8      |
| 2 | <p>Bitte kürzen Sie soweit wie möglich</p> <p>a)</p> $\frac{14a^2oswy^2 + 77a^2orw - 28a^2ow}{-49a^2ov^2w + 21a^2c^2jovw + 63a^2ors^2w} \quad \text{L:}$ $\frac{14a^2oswy^2 + 77a^2orw - 28a^2ow}{-49a^2ov^2w + 21a^2c^2jovw + 63a^2ors^2w} = \frac{2sy^2 + 11r - 4}{-7v^2 + 3c^2jv + 9rs^2} \quad [7a^2ow]$ <p>b)</p> $\frac{-6ap + 12a}{66au - 24a} \quad \text{L:}$ $\frac{-6ap + 12a}{66au - 24a} = \frac{-p + 2}{11u - 4} \quad [6a]$ <p>c)</p> $\frac{-33v^2 + 22mv - 77sv}{55v^2 - 33mv - 99v} \quad \text{L:}$ $\frac{-33v^2 + 22mv - 77sv}{55v^2 - 33mv - 99v} = \frac{-3v + 2m - 7s}{5v - 3m - 9} \quad [11v]$                                                                                                                                                                                                                                                                                                                                                                  | 6      |

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| 3 | <p>Bitte berechnen Sie</p> <p>a)</p> $\frac{-4bj + 11}{-4r + 1} + \frac{-7k - 10}{-11u - 4b}$ <p>L :</p> $\frac{-4bj + 11}{-4r + 1} + \frac{-7k - 10}{-11u - 4b} = \frac{44bju + 16b^2j - 121u - 44b + 28kr + 40r - 7k - 10}{44ru + 16br - 11u - 4b}$ <p>b)</p> $\frac{-4hq + 9}{-p - 2} - \frac{-2e - 1}{-6gm - 11}$ <p>L :</p> $\frac{-4hq + 9}{-p - 2} - \frac{-2e - 1}{-6gm - 11} = \frac{-101 + 24ghmq + 44hq - 54gm - 2ep - p - 4e}{6gmp + 11p + 12gm + 22}$ <p>c)</p> $\frac{11ry - 3}{3bg - 1} - \frac{-k + g}{-9js - 11dy}$ <p>L :</p> $\frac{11ry - 3}{3bg - 1} - \frac{-k + g}{-9js - 11dy} = \frac{-99jr sy - 121dry^2 + 27js + 33dy + 3bgk - 3bg^2 - k + g}{-27bgjs - 33bdgy + 9js + 11dy}$ | 6 |
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