Herausheben von gemeinsamen Faktoren

$\underline{a}b + \underline{a}c = a\,(b + c)$

Vorgehensweise:

- Gemeinsame Faktoren suchen und unterstreichen
- Die gemeinsamen Faktoren herausheben (nach dem = anschreiben und danach Klammer öffnen)
- In die Klammer der Reihe nach die „Rest"-Faktoren mit Rechenzeichen anschreiben.

1) $\underline{3}a + \underline{3}b = \mathbf{3\,(a+b)}$	2) $3\underline{a}b + 4\underline{b}x = \mathbf{b\,(3a + 4x)}$
$12x^2 + 12\,y =$	$2ac + 3ad =$
$4\,ad - 4\,bc =$	$3e^2u - 4f^2u =$
$5\,ab^2 + 5\,c^2d =$	$t^2x - 3x =$
$21\,x^2 - 21\,y^2 =$	$12a - 5ab^2 =$
$2a + 2b + 2c =$	$2ab + bc =$
3) $3ab + 6ax = \underline{3a}b + \underline{3}\cdot 2\underline{a}x = \mathbf{3a\,(b + 2x)}$	4) $2a + 3a^2 = 2\underline{a} + 3\,\underline{a}\cdot a = \mathbf{a\,(2 + 3a)}$
$4a + 8b =$	$3a^2 - 4ab =$
$3x^2 - 9ab =$	$2tx + 3x^2 =$
$2ab + 8c =$	$3a^2x - 2a^3 =$
$6x - 2y^2 =$	$a^2b^2 + 3b^2 =$
$12a + 6b - 12c =$	$2a^2b - 3ab^2 =$
5) $a^2b + a^2 = \underline{a^2}b + \underline{a^2}\cdot 1 = \mathbf{a^2\,(b + 1)}$	6) $4a^2b - 6ab^3 = \mathbf{2ab\,(2a - 3b^2)}$
$3ab + b =$	$6a^3b^3 + 8ab =$
$2tx - x =$	$4a^2b + 12ab^3 =$
$a - 4ab =$	$15a^2x - 12ax^2 =$
$3ax^2 - x^2 =$	$3ab^3 - 9a^2b^2 =$
$ab^2 - ab^2 =$	$24a^3x^2 + 6a^2x^2 =$

Lösungen

1) $3a + 3b = \mathbf{3\,(a+b)}$	2) $3ab + 4bx = \mathbf{b\,(3a + 4x)}$
$12x^2 + 12\,y = 12\,(x^2 + y)$	$2ac + 3ad = a\,(2c + 3d)$
$4\,ad - 4\,bc = 4\,(ad - bc)$	$3e^2u - 4f^2u = u\,(3e^2 - 4f^2)$
$5\,ab^2 + 5\,c^2d = 5\,(ab^2 + c^2d)$	$t^2x - 3x = x\,(t^2 - 3)$
$21\,x^2 - 21\,y^2 = 21\,(x^2 - y^2)$	$12a - 5ab^2 = a\,(12 - 5b^2)$
$2a + 2b + 2c = 2\,(a + b + c)$	$2ab + bc = b\,(2a + c)$
3) $3ab + 6ax = 3ab + 3\cdot 2ax = \mathbf{3a\,(b + 2x)}$	4) $2a + 3a^2 = 2a + 3\,a\cdot a = \mathbf{a\,(2 + 3a)}$
$4a + 8b = 4\,(a + 2b)$	$3a^2 - 4ab = a\,(3a - 4b)$
$3x^2 - 9ab = 3\,(x^2 - 3ab)$	$2tx + 3x^2 = x\,(2t + 3x)$
$2ab + 8c = 2\,(ab + 4c)$	$3a^2x - 2a^3 = a^2\,(3x - 2a)$
$6x - 2y^2 = 2\,(3x - y^2)$	$a^2b^2 + 3b^2 = b^2\,(a^2 + 3)$
$12a + 6b - 12c = 6\,(2a + b - 2c)$	$2a^2b - 3ab^2 = ab\,(2a - 3b)$
5) $a^2b + a^2 = a^2b + a^2\cdot 1 = \mathbf{a^2\,(b + 1)}$	6) $4a^2b - 6ab^3 = \mathbf{2ab\,(2a - 3b^2)}$
$3ab + b = b\,(3a + 1)$	$6a^3b^3 + 8ab = 2ab\,(3a^2b^2 + 4)$
$2tx - x = x\,(2t - 1)$	$4a^2b + 12ab^3 = 4ab\,(a + 3b^2)$
$a - 4ab = a\,(1 - 4b)$	$15a^2x - 12ax^2 = 3ax\,(5a - 4x)$
$3ax^2 - x^2 = x^2\,(3a - 1)$	$3ab^3 - 9a^2b^2 = 3ab^2\,(b - 3a)$
$ab^2 - ab^2 = 0$ *ggg*	$24a^3x^2 + 6a^2x^2 = 6a^2x^2\,(4a + 1)$