

1.  $5a + 5b = 5(a + b)$
2.  $6x - 9 = 3(2x - 3)$
3.  $cd + ce = c(d + e)$
4.  $u^2 - uv = u(u - v)$
5.  $6ax + 6ay = 6a(x + y)$
6.  $24z^3 - 16z^2 = 8z^2(3z - 2)$
7.  $10c - 21$  unzerlegbar
8.  $108n^2 + 168n = 12n(9n + 14)$
9.  $8a + 4 = 4(2a + 1)$
10.  $z^2 - z = z(z - 1)$
11.  $6bc + 2b = 2b(3c + 1)$
12.  $x^2y^2 - xy = xy(xy - 1)$
13.  $14f - 21g + 28 = 7(2f - 3g + 4)$
14.  $10at + 15bt - 6ct = t(10a + 15b - 6c)$
15.  $xy - y^2 - yz = y(x - y - z)$
16.  $42m^3n^2 - 70m^2n^3 - 42m^2n^2 = 14m^2n^2(3m - 5n - 3)$
17.  $3qr^2 + 3r^3 + 3r^2s - r^2 = r^2(3q + 3r + 3s - 1)$
18. (a)  $-y - 2 = -(y + 2)$   
(b)  $-5c + d = -(5c - d)$   
(c)  $-3m + 4n - 1 = -(3m - 4n + 1)$   
(d)  $u - v - w = -(-u + v + w)$   
(e)  $-7x^2 + 4x + 11 = -(7x^2 - 4x - 11)$
19. (a)  $2n + \frac{4}{5} = 2(n + \frac{2}{5})$   
(b)  $4u + 3v + 2w = 2(2u + 1.5v + w)$   
(c)  $2a - \frac{5}{4}b + \frac{6}{7} = 2(a - \frac{5}{8}b + \frac{3}{7})$
20. (a)  $\frac{1}{6}a + \frac{3}{2}b = \frac{1}{6}(a + 9b)$   
(b)  $\frac{1}{2}q^2 - q + \frac{2}{3} = \frac{1}{6}(\frac{1}{2}q^2 : \frac{1}{6} - q : \frac{1}{6} + \frac{2}{3} : \frac{1}{6}) = \frac{1}{6}(3q^2 - 6q + 4)$   
(c)  $4c + 5d - \frac{1}{6} = \frac{1}{6}(4c : \frac{1}{6} + 5d : \frac{1}{6} - \frac{1}{6} : \frac{1}{6}) = \frac{1}{6}(24c + 30d - 1)$
21.  $(9xy + 9y) : (x + 1) = 9y(x + 1) : (x + 1) = 9y$

22.  $(4.5ac - 7.5ad) : (3c - 5d) = 1.5a(3c - 5d) : (3c - 5d) = 1.5a$
23.  $(18ab - 12b^2) : (3a - 2b) = 6b(3a - 2b) : (3a - 2b) = 6b$
24.  $(0.7x^2y + 2.8xy^2) : (x + 4y) = 0.7xy(x + 4y) : (x + 4y) = 0.7xy$
25.  $(a + 2)x + (b - 3)x = [(a + 2) + (b - 3)]x$   
 $= (a + b - 1)x$
26.  $r(2u + 3v) - r(u + v) = r((2u + 3v) - (u + v))$   
 $= r(2u + 3v - u - v) = r(u + 2v)$
27.  $a(x + y) + b(x + y) = (x + y)(a + b)$
28.  $m(u + v) - 3(u + v) = (u + v)(m - 3)$
29.  $4v(p + q) - 8w(p + q) = (p + q)(4v - 8w) = 4(p + q)(v - 2w)$
30.  $(t^2 - t)z + 9(t^2 - t) = (t^2 - t)(z + 9) = t(t - 1)(z + 9)$
31.  $a^3(2ab - c) + a^2(2ab - c) = a^2(2ab - c)(a + 1)$
32.  $5p(3p - 2) + (-3p + 2) = 5p(3p - 2) - (3p - 2)$   
 $= (3p - 2)(5p - 1)$
33.  $x(y - z) - (z - y) = x(y - z) + (y - z) = (x + 1)(y - z)$
34.  $s(st - 4) + t(4 - st) = s(st - 4) - t(st - 4) = (st - 4)(s - t)$
35.  $r(-r + 2) + (r - 2) = -r(r - 2) + (r - 2) = (r - 2)(-r + 1)$
36.  $4x(a + b) - 5y(a + b) - 6(a + b) - 3x(a + b) - (a + b)$   
 $= (a + b)(4x - 5y - 6 - 3x - 1)$   
 $= (a + b)(x - 5y - 7)$
37.  $3p^2(u - v) - 2p(u - v) - 8(u - v) + (u - v)$   
 $= (u - v)(3p^2 - 2p - 8 + 1)$   
 $= (u - v)(3p^2 - 2p - 7)$
38.  $(e - 4f)(f + g) + 2e(f + g) = (f + g)((e - 4f) + 2e)$   
 $= (f + g)(3e - 4f)$
39.  $(c - d)(n + 5) + (c - d)(2n + 3) = (c - d)((n + 5) + (2n + 3))$   
 $= (c - d)(n + 5 + 2n + 3)$   
 $= (c - d)(3n + 8)$
40.  $q(2x - 3y) - (q + 1)(-2x + 3y) = q(2x - 3y) + (q + 1)(2x - 3y)$   
 $= (2x - 3y)(q + q + 1)$   
 $= (2x - 3y)(2q + 1)$
41.  $(3a - 5c)(m + 4) - (a + c)(m + 4) = (m + 4)((3a - 5c) - (a + c))$   
 $= (m + 4)(2a - 6c)$   
 $= 2(a - 3c)(m + 4)$