

Mathematik 7. Klasse	25.02.2016	
Trainingsblatt: Multiplikation von Summen		<b>Lösungsvorschlag</b>

1. a)  $(p + q)(x - y) = px - py + qx - qy$
- b)  $(3p + 5q)(2x + 4y) = 6px + 12py + 10qx + 20qy$
- c)  $(m - 2n)(2m + n) = 2m^2 + mn - 4mn - 2n^2 = 2m^2 - 3mn - 2n^2$
- d)  $(12x^2 - 7xy)(3xy - y^2) = 36x^3y - 12x^2y^2 - 21x^2y^2 + 7xy^3 = 36x^3y - 33x^2y^2 + 7xy^3$
- e)  $(3y - 2,5z)(0,1y - 0,4z) = 0,3y^2 - 1,2yz - 0,25yz + 1z^2 = 0,3y^2 - 1,45yz + z^2$
2. a)  $(a + b + c)(c - d) = ac - ad + bc - bd + c^2 - cd$
- b)  $(s^2 + s)(s^2 + 8s - 5) = s^4 + 8s^3 - 5s^2 + s^3 + 8s^2 - 5s = s^4 + 9s^3 + 3s^2 - 5s$
- c)  $(x - y + z)(u - v - w) = ux - vx - wx - uy + vy + wy + uz - vz - wz$
- d)  $(z^2 - z + 1)(z^2 - z - 1) = z^4 - z^3 - z^2 - z^3 + z^2 + z + z^2 - z - 1 = z^4 - 2z^3 + z^2 - 1$
- e)  $-2(a + b)(3a - b) = -6a^2 + 2ab - 6ab + 2b^2 = -6a^2 - 4ab + 2b^2$
3. a)  $a(x - y) + a(x + y) = ax - ay + ax + ay = 2ax$
- b)  $a(x - y) - a(x + y) = ax - ay - ax - ay = -2ay$
- c)  $a(y - x) - a(x - y) = ay - ax - ax + ay = 2ay - 2ax$
- d)  $-a(x - y) - a(-x + y) = -ax + ay + ax - ay = 0$