

**Aufgabe 4**

a)  $(a + 3)(a + 5) = a^2 + 5a + 3a + 15 = a^2 + 8a + 15$

b)  $(x + 6)(x + 6) = x^2 + 6x + 6x + 36 = x^2 + 12x + 36$

c)

$$\begin{aligned}(5 + b)^2 &= (5 + b)(5 + b) \\ &= 25 + 5b + 5b + b^2 \\ &= 25 + 10b + b^2\end{aligned}$$

d)  $(8 + x)(x + 7) = 8x + 56 + x^2 + 7x = 15x + 56 + x^2$

e)  $(x - 6)(x - 6) = x^2 - 6x - 6x + 36 = x^2 - 12x + 36$

f)  $(x - y)(y + x) = xy + x^2 - y^2 - yx = x^2 - y^2$

g)

$$\begin{aligned}(a + 12)^2 &= (a + 12)(a + 12) \\ &= a^2 + 12a + 12a + 144 \\ &= a^2 + 24a + 144\end{aligned}$$

h)  $(x + 3)(x - 3) = x^2 - 3x + 3x - 9 = x^2 - 9$

i)  $(3x + 5)(3x - 5) = 9x^2 - 15x + 15x - 25 = 9x^2 - 25$

j)  $(x + 3y)(5x + y) = 5x^2 + xy + 15xy + 3y^2 = 5x^2 + 16xy + 3y^2$

k)

$$\begin{aligned}(3x + 8y)^2 &= (3x + 8y)(3x + 8y) \\ &= 9x^2 + 24xy + 24xy + 64y^2 \\ &= 9x^2 + 48xy + 64y^2\end{aligned}$$

1)

$$\begin{aligned}(3x - 8y)^2 &= (3x - 8y)(3x - 8y) \\ &= 9x^2 - 24xy - 24xy + 64y^2 \\ &= 9x^2 - 48xy + 64y^2\end{aligned}$$