Übung

1. Multipliziere.

a.) (a + b) (b - 3) =

$ab - 3a + b^2 - 3b$

b.) (r - 5) (s + 4) =

$rs + 4r - 5s - 20$

c.) (a - 2) (b - 2) =

$ab - 2a - 2b + 4$

(a + b) (c + d)

= ac + ad + bc + bd

① ② ③ ④

(a + b) (c + d) = a • c + a • d + b • c + b • d	
Summen miteinander multiplizieren	
	$(2a - 4) \cdot (5 + 3a)$
(1) Klammern auflösen	$= 10a + 6a^2 - 20 - 12a$
(2) Ordnen	$= 6a^2 + 10a - 12a - 20$
(3) Zusammenfassen	$= 6a^2 - 2a - 20$

2. Multipliziere wie im Kasten. Achte auf + und -.

a.) (3x + 4) (5y + 6)

(1) = $15xy + 18x + 20y + 24$

(2) = $18x + 15xy + 20y + 24$

b.) (2x - 5)(7y + 3)

(1) = $14xy + 6x - 35y - 15$

(2) = $6x + 14xy - 35y - 15$

c.) (4x + 1) (3y - 5)

(1) = $12xy - 20x + 3y - 5$

(2) = $-20x + 12xy + 3y - 5$

d.) (3y - 5) (5x - 3)

(1) = $15xy - 9y - 25x + 15$

(2) = $-25x + 15xy - 9y + 15$

3. Multipliziere wie im Kasten. Achte auf + und -.

a.) (3 + x) (x - 4)

(1) = $3x - 12 + x^2 - 4x$

(3) = $x^2 - x - 12$

b.) (2y - 3) (2 - 3y)

(1) = $4y - 6y^2 - 6 + 9y$

(3) = $-6y^2 + 13y - 6$

c.) (x - 4) (x + 2)

(1) = $x^2 + 2x - 4x - 8$

(3) = $x^2 - 2x - 8$

d.) (2 x - 3) (x - 2)

(1) = $2x^2 - 4x - 3x + 6$

(3) = $2x^2 - 7x + 6$

4. Übertrage die Tabelle ins Heft und multipliziere.

a.) (a + b) (c + d) = $ac + ad + bc + bd$

b.) (a + b) (c - d) = $ac - ad + bc - bd$

c.) (a - b) (c + d) = $ac + ad - bc - bd$

d.) (x - y) (x + y) = $x^2 + xy - xy - y^2$

$x^2 - y^2$

5.

a.) (x + 3) (y - 4) = $xy - 4x + 3y - 12$

b.) (x -2) (y + 3) = $xy + 3x - 2y - 6$

c.) (x -4) (y -2) = $xy - 2x - 4y + 8$

d.) (a + 3) (b -5) = $ab - 5a + 3b - 15$

6.

a.) (2x + 5)(y - 6) = $2xy - 12x + 5y - 30$

b.) (3 x -4) (y + 2) = $3xy + 6x - 4y - 8$

c.) (0,4 a + 3) (b + 1,2) = $0{,}4ab + 0{,}48a + 3b + 3{,}6$

d.) (a + 3,8) (-4 - 0,5b) = $-4a - 0{,}5ab - 15{,}2 - 1{,}9b$

8.

a.) (a + 1) (2a + 3) = $2a^2 + 3a + 2a + 3$

$2a^2 + 5a + 3$

b.) (2x - 4) (y - 3) = $2xy - 6x - 4y + 12$

c.) (3x - 4) (2 - 5y) = $6x - 15xy - 8 + 20y$

d.) (1,8y + 3) (y - 4) = $1{,}8y^2 - 7{,}2y + 3y - 12$

$1{,}8y^2 - 4{,}2y - 12$

e.) (5a - 0,9) (7,5 + 3a) =

$37{,}5a + 15a^2 - 6{,}75 - 2{,}7a$