

## Foil Product Problems

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Multiply out each of the following. Write complete and correct steps for all problems. Do not use a calculator. Work the odd problems, if you have any trouble whatsoever also do the even problems. The last 10 problems are review problems.

(1)  $(x + 1)(x + 2)$

(2)  $(x + 3)(x + 4)$

(3)  $(x - 2)(x + 4)$

(4)  $(y + 3)(y - 2)$

(5)  $(x + 1)^2$

(6)  $(a + 2)^2$

(7)  $(a - 3)(a + 5)$

(8)  $(s - 9)(s + 11)$

(9)  $(2a + 5)^2$

(10)  $(3x + 2)^2$

(11)  $(x - 8)(x + 7)$

(12)  $(x - 1)(x - 9)$

(13)  $(2x + 1)(x - 2)$

(14)  $(3y + 2)(y - 3)$

(15)  $(x - 4y)^2$

(16)  $(a - 3b)^2$

(17)  $(3z - 6)(2z - 8)$

(18)  $(5a - 7)(7a - 6)$

(19)  $(x - 5)(x + 5)$

(20)  $(a + 9)(a - 9)$

(21)  $(a + b)(c + d)$

(22)  $(w + x)(y - z)$

(23)  $(3a - 2b)(5a + 4b)$

(24)  $(3x - 5y)(2x + 7y)$

(25)  $(2x^2 - 3y^2)^2$

(26)  $(5x^2 + 2y^2)^2$

(27)  $(3 - 4a)(2 + 7a)$

(28)  $(5 - 2y)(8 - 7y)$

(29)  $(3x - 4y)(2x + 7y)$

(30)  $(4a + 3b)(2a - 7b)$

(31)  $(2a - b)(3c + 2d)$

(32)  $(4x - 9y)(2s - 9t)$

(33)  $(2x - 5)(2x + 5)$

(34)  $(3b + 2)(3b - 2)$

(35)  $(2 - 3a)(7 + 2a)$

(36)  $(6 - 5b)(3 - 2b)$

(37)  $(5x - 7)^2$

(38)  $(6y - 5)^2$

(39)  $(3x^2 - 4)^2$

(40)  $(5z^2 + 5)^2$

(41)  $(x + 8)(x + 9)$

(42)  $(2a + b)(3c - d)$

(43)  $(2a - 5)(3a + 2)$

(44)  $(2x - 5)(2x + 5)$

(45)  $(x^2 - 5)^2$

(46)  $(4a^2 - 7b^2)^2$

(47)  $(2x - y)(3x + 4y)$

(48)  $(3x^2 - 5)(3x^2 + 4)$

(49)  $(3 - 2x)(5 + 4x)$

(50)  $(3a^2 - b^2)(6a^2 + 5b^2)$

- Answers: (1)  $x^2 + 3x + 2$  (2)  $x^2 + 7x + 12$  (3)  $x^2 + 2x - 8$  (4)  $y^2 + y - 6$  (5)  $x^2 + 2x + 1$
- (6)  $a^2 + 4a + 4$  (7)  $a^2 + 2a - 15$  (8)  $s^2 + 2s - 99$  (9)  $4a^2 + 20a + 25$  (10)  $9x^2 + 12x + 4$
- (11)  $x^2 - x - 56$  (12)  $x^2 - 10x + 9$  (13)  $2x^2 - 3x - 2$  (14)  $3y^2 - 7y - 6$  (15)  $16y^2 - 8xy + x^2$
- (16)  $9b^2 - 6ab + a^2$  (17)  $6z^2 - 36z + 48$  (18)  $35a^2 - 79a + 42$  (19)  $x^2 - 25$  (20)  $a^2 - 81$
- (21)  $bd + ad + bc + ac$  (22)  $-xz - wz + xy + wy$  (23)  $-8b^2 + 2ab + 15a^2$  (24)  $-35y^2 + 11xy + 6x^2$
- (25)  $9y^4 - 12x^2y^2 + 4x^4$  (26)  $4y^4 + 20x^2y^2 + 25x^4$  (27)  $-28a^2 + 13a + 6$  (28)  $14y^2 - 51y + 40$
- (29)  $-28y^2 + 13xy + 6x^2$  (30)  $-21b^2 - 22ab + 8a^2$  (31)  $-2bd + 4ad - 3bc + 6ac$
- (32)  $81ty - 18sy - 36tx + 8sx$  (33)  $4x^2 - 25$  (34)  $9b^2 - 4$  (35)  $-6a^2 - 17a + 14$
- (36)  $10b^2 - 27b + 18$  (37)  $25x^2 - 70x + 49$  (38)  $36y^2 - 60y + 25$  (39)  $9x^4 - 24x^2 + 16$
- (40)  $25z^4 + 50z^2 + 25$  (41)  $x^2 + 17x + 72$  (42)  $-bd - 2ad + 3bc + 6ac$  (43)  $6a^2 - 11a - 10$
- (44)  $4x^2 - 25$  (45)  $x^4 - 10x^2 + 25$  (46)  $49b^4 - 56a^2b^2 + 16a^4$  (47)  $-4y^2 + 5xy + 6x^2$
- (48)  $9x^4 - 3x^2 - 20$  (49)  $-8x^2 + 2x + 15$  (50)  $-5b^4 + 9a^2b^2 + 18a^4$