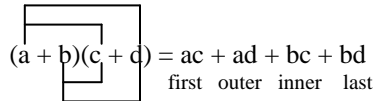


F.O.I.L. Multiplication

Given two terms of the form $(a + b)$; when multiplied together produce:

$$(a+b)(a+b) = a^2 + 2ab + b^2$$

We can find the answer to any such problem by foiling. FOIL stands for: first, outer, inner, last.


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

first outer inner last

ex. $(x+5)(x+3) = x^2 + 3x + 5x + 15 = x^2 + 8x + 15$

ex. $(2x+5)(x+3) = 2x^2 + 6x + 5x + 15 = 2x^2 + 11x + 15$

ex. $(2x+5)(7x+3) = 14x^2 + 6x + 35x + 15 = 14x^2 + 41x + 15$

ex. $(2x^2+5)(x+3) = 2x^3 + 6x^2 + 5x + 15$

ex. $(x+5)(x-3) = x^2 - 3x + 5x - 15 = x^2 + 2x - 15$

ex. $(2x-5)(x-3) = -2x^2 + 6x + 5x - 15 = -2x^2 + 11x - 15$

Exercises: Foil the following:

1.) $(x+3)(x+2) = ?$

2.) $(x+6)(x+5) = ?$

3.) $(5x^2+3)(8x+4) = ?$

4.) $(2x+9)(6x^4+12) = ?$

5.) $(7x^3+1)(4x+13) = ?$

6.) $(-x+4)(-3x-8) = ?$

7.) $(x^2+7)(4x-7) = ?$

8.) $(-3x^3-6)(2x^2+6) = ?$

9.) $(4x^3-5)(x+9) = ?$

10.) $(5x^5+2x)(3x^3-9) = ?$

* $x^m \cdot x^n = x^{m+n}$