

9.2: Multiplying Polynomials

“I WILL ...

Multiply monomials and polynomials.”

I. Multiplying Monomials

- A. Any term that is considered _____ term
- B. If the variable has two bases, think, _____ [add the bases]
- C. If the variables have power upon power, think, _____
[multiply the powers]

II. Multiplying Binomials (using the FOIL method)

- A. **F** _____: Multiply the first term in the first bracket and first term in the second bracket
- B. **O** _____: Multiply the first term in the first bracket and second term in the second bracket
- C. **I** _____: Multiply the second term in the first bracket and first term in the second bracket
- D. **L** _____: Multiply the second term in the first bracket and second term in the second bracket
- E. Simplify the expression by combining like terms
- F. Check using your graphing calculator by looking at the graph and at $y_1 = y_2$

III. Multiplying Binomials (using the BOX method)

- A. Create a 2x2 box with each factor going on top and on the side
- B. Multiply the _____ term in the top and _____ term in the left side for box #1
- C. Multiply the _____ term in the top and _____ term in the left side for box #2
- D. Multiply the _____ term in the top and _____ term in the left side for box #3
- E. Multiply the _____ term in the top and _____ term in the left side for box #4
- F. Simplify the expression by combining like terms
- G. Check using your graphing calculator by looking at the graph and at $y_1 = y_2$

IV. Model Problems

Ex 1: Multiply $(5x^3)(4x^5)$	Ex 2: Multiply $(5x^2y^3)^3$	Ex 3: Multiply, $(-2x^3y)^4$	Your Turn: Multiply $(-3a^4bc^2)^3$
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Ex 4: Multiply $5x(2x^3 + 6)$	Ex 5: Multiply $-3x^2(5x^2 + 6x - 1)$	Your Turn: Multiply $-5x^3(2x^2 - 9x + 2)$
Ex 6: Multiply $(x + 2)(x + 3)$ FOIL: BOX:	Ex 7: Multiply $(x + 3)(x - 5)$	Your Turn: Multiply $(x - 3)(x - 5)$
Ex 8: Multiply $(x - 5)(3x + 4)$	Ex 9: Multiply $(x - 4)(3x + 2)$	Your Turn: Multiply $(4x - 1)(x + 5)$
Ex 10: Multiply $(2x - 1)(5x + 3)$	Ex 11: Multiply $(3x - 1)(4x + 9)$	Your Turn: Multiply $(8x + 11)(6x - 1)$
Ex 12: Multiply $(x - 3)(-x^2 + 2x + 4)$	Ex 13: Multiply $(x + 2)(3x^2 - 4x + 1)$	Your Turn: Multiply $(2x^2 - 3x - 4)(x + 7)$
Ex 14: Find the perimeter and area of a rectangle which length is $x - 5$ and width is $3x + 1$.	Ex 15: Find the perimeter and area of a triangle which sides are $x + 5$ and height is $x + 6$.	Your Turn: Find the perimeter and area of a rectangle which length $x - 5$ and width is $3x + 1$.