

L5 Multiplication of Polynomials

Case 1- Monomial times a Polynomial:

Examples: $3(2x + 4) =$

Distributive Property

- Now Try (a) $3x(5x - 2) =$
(b) $-2x^2(3x + 5) =$
(c) $\frac{2}{3}x^2(6x^2 - 9x + 3) =$

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Ex 1: Multiplying Polynomials

$3x(5x^2 + 2x) =$ _____
 $-5(2x + 1) =$ _____
 $-2x^2(3x - 3) =$ _____
 $\frac{3}{2}x^2(6x^3 - 8x + 4) =$ _____

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Case 2- Binomial times a Binomial:

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

Option 1: Use Distributive Property:

$2x(x + 4) + 2(x + 4)$
 $= 2x^2 + 8x + 2x + 8$
 $= 2x^2 + 10x + 8$

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Option 2: Expand and simplify (FOIL)

$(2x + 2)(x + 4)$
F - First
O - Outside
I - Inside
L - Last
 $= (2x)(x) + (2x)(4) + (2)(x) + (2)(4)$
 $= 2x^2 + 8x + 2x + 8$
 $= 2x^2 + 10x + 8$

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2 choices of methods

$(2x + 2)(x + 4)$
 $2x(x + 4) + 2(x + 4)$
 $= 2x^2 + 8x + 2x + 8$
 $= 2x^2 + 10x + 8$

$(2x + 2)(x + 4)$
F - First
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 $= 2x^2 + 8x + 2x + 8$
 $= 2x^2 + 10x + 8$

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Ex 2: Expand and simplify (FOIL)

$(x - 3)(x + 5)$

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Ex 3: Foil practice

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

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Practice:
2.6 # 1-6



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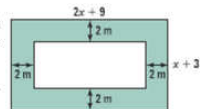
Ex 4: (2.6 # 7 (b))
 $(3x + 2)(2x - 3) - (x - 1)(2x + 1)$

Ex 5: Find the missing factor
 $(\text{_____})(2x - 5) = 8x^2 - 20x$

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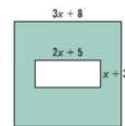
- 14.** The pool at a municipal park is surrounded by a cement sidewalk as indicated in the figure on the right. The dimensions are in metres.

What is the area of the sidewalk? _____



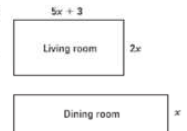
11

- 18.** Marlene wants to put a rectangular table in the square space of her kitchen. What polynomial represents the space she will have left?



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- 20.** The dining room and the living room of a house have the same area. What is the perimeter of the dining room?



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Practice: 2.6 # 7-10



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