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LEARNING OBJECTIVE: We will multiply polynomials by monomials. (Lesson 82)

CONCEPT DEVELOPMENT:

Multiplying polynomials and monomials requires us to apply the DISTRIBUTIVE PROPERTY.

$5p(7p^2 - 2p + 3)$ $(5p \cdot 7p^2) - (5p \cdot 2p) + (5p \cdot 3)$

We can also use ARRAY MODELS to MULTIPLY.

	$7p^2$	$-2p$	3
$5p$	$35p^3$	$-10p^2$	$15p$

When you think **DISTRIBUTIVE PROPERTY**,
think about **ARRAY MODELS!!**

GUIDED PRACTICE:

Steps for Multiplying Polynomials by Monomials

1. Distribute the monomial to each of the terms in the polynomial.
2. Simplify as needed.

$4x^2(3x^4y^3)$ Monomial monomial $\boxed{12x^6y^3}$ $\cancel{12x^6 + 4x^2y^3}$	WHITEBOARD $-2x^4y^5(6xy^3)$ $\cancel{-12x^4y^{15}}$ $-12x^5y^8$ B^ro Monomial

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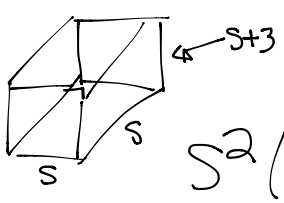
$5k(2k^2 - 5k + 3)$ trinomial $\boxed{10k^3 - 25k^2 + 15k}$ $2k^2$ $-5k$ 3 $5k$ $10k^3$ $-25k^2$ $15k$	$8t(3s^3 + 4s^2t - 2t)$ $24s^3t + 32s^2t^2 - 16t^2$
$(4m^3n^2)(5m^2n - 3mn - 2)$ $20m^5n^3 - 12m^4n^3 - 8m^3n^2$	ARRAY MODEL $2a^2(5a - 6ab^2 + 5b^2 + 1)$ $\boxed{10a^3 - 12a^3b^2 + 10a^2b^2 + 2a^2}$
Zoe is making a planter box for her garden with a square base. She wants to height to be 3 more inches than that of the length of a side. If she wants the volume to be as close to 6000 cubic inches as possible, what are the dimensions of the box?  $V = lwh$ $s^2(s+3)$ $s^3 + 3s^2 = 6000$ $17 \times 17 \times 20 \approx 6000$ cu.in. s | V 15 | 4050 18 | 6864 17 | 5780	The sides of a rectangular painting are consecutive odd integers. Write an expression to represent this situation. If the painting is 783 square inches, what are the dimensions of the painting? $x+2$ x $x^2 + 2x = 783$ 27×29

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Independent Practice:

Personal Math Trainer explore?

14.3 Homework (Ind Practice Odds 10-27)

Activating Prior Knowledge:

We can use the distributive property:

$5(3x^3 - 11y^2)$ Monomial Constant binomial $\boxed{15x^3 - 55y^2}$	WHITEBOARD PLS! $12(4a^2b - 9c^5)$ $\boxed{48a^2b - 108c^5}$

Closure:

Is the product of 2 polynomials ALWAYS a polynomial?

Notes:

This is Go Math Pilot, mapping to lesson 14-3. In ENY, this translates to lesson 9 of Alg 1, module 1.

Homework from Textbook Page 507-08 Questions 10-27.