Pre-Algebra

Essential Question: How do we multiply monomials and polynomials?

Do Now: Write as a single power.

a. $2^3 \bullet 2^3$ b. $3^5 \bullet 3^2 \bullet 3$ c. $x^4 \bullet x^5$ d. $-7x^4 \bullet 4x^5$

Multiplying Monomials

- **Multiply _____.**
- **Multiply _____ (_____ exponents if bases are the same).**

1. $3(2x)$ 2. $4(6x^2)$ 3. $7(2xy)$ 4. $(3x)(2x)$

5. $(-4x^2)(5x)$ 6. $(9x^3)(3x^2)$ 7. $(x^2y^3)(2x^3y^4)$ 8. $(4xy)(6x^2)$

9. $-4a(7ab)$ 10. $(6a^4b)(2ab^9)(3a^3)$ 11. $(-2x)^3$ 12. $-(7ab)(4b^2)$

Multiplying Monomials & Polynomials

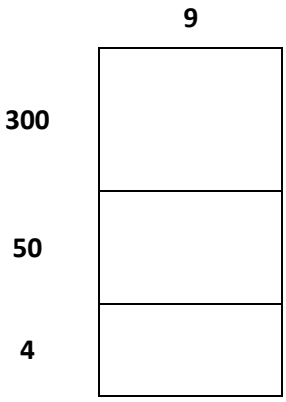
- **Use the _____ property.**
- **Add exponents of like bases.**

13. $2x(3x + 4)$ 14. $-4x^2(x^3 + 3x^2 - 1)$ 15. $x^2y(2x^2y + 9xy - 3xy^3)$

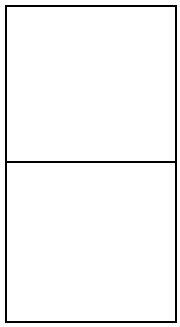
THINK ABOUT THIS....

How can we represent multiplying a polynomial by a monomial with a diagram?

9 x 354



x(x + 12)



$3x(x^2 + 4x + 7)$

Create diagrams in order to multiply the following monomials by polynomials.

16. $2a^2(7a - 3)$

17. $7w(6w^2 + 11w - 2)$

Turn and Talk: 

For A – C, write down a product of a monomial and polynomial that is equivalent to the expression.

A. $2x^4 + 2x^5 + 2x^{10}$

B. $42w^3 - 14w + 77w^5$

C. $z^2a + z^3b$