Unit 2 Day 5 Multiplying a Polynomial by a Monomial

Instead of just multiplying a polynomial by a constant, we can go one step farther and multiply by a monomial.

We must remember our exponent rule from last unit for multiplication. We always keep the same base and \_\_\_\_\_\_\_\_\_\_ exponents.

Rule: To multiply a polynomial by a monomial, we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the coefficients and \_\_\_\_\_\_\_\_\_\_\_ the exponents with the same base.

# MULTIPLYING A POLYNOMIAL BY A MONOMIAL

Use the distributive property $a\left(b+c\right)=ab+ac$ to multiply each term inside the brackets by the term outside the brackets.

$7x\left(x+y\right)=$

$-3a\left(a+b\right)=$

$14x\left(x^{2}-x^{4}\right)=$

**Examples:**

Expand and Simplify if necessary.

a) 2mn(–3m2n3) b) –x2y5(–5xy10z3)

c) 8a3b-4c7(–2c2a-6b10 + 3b3) d) –7p3qr-6(–prq + qpr)

e) 2x2y-1z0(–3x4yz-3 + 10) – 4x4y-2z(3x2y2z-4 – 1)

![MC900389942[1]]()

f) **Enjoy! It’s a Peach. ♥**

–3v3w-2x7y8z-5(–7x2z-3w-4v-5 – 6x-3z-2v-4) – 8x3w-4z-3v-2y-7(–5v3w2x9y5z-5 – 7)

**Example:** Determine the area of the following figure:

2x2

3x2-5

2x+3

6x +3

**Example:** Determine the volume of the following figure:

-x3

4x2

5x2 – 6x + 2

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