Name:_____Date:_____Period:_____

11-1 Add & Subtract Polynomials

Standard

- B.A.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

Objective

- SWBAT write polynomials in standard form IOT add & subtract them.

Key Concepts

_____- a mathematical expression consisting of more than two terms.

_____- a mathematical expression consisting of one term.

_____- a mathematical expression consisting of two terms.

_____- the number part of a term.

_____- a term consisting of a single number.

_____- terms consisting of the same variables and exponents but may have different coefficients.

_____- a way of ordering the terms of a polynomial with the greatest power of one of these variables to the least power.

Examples

1. (I do) Write the polynomial $-x^2 + 2x^3 - x + 1$ in standard form. Then classify it according to its degree and number of terms.

2. (We do) Add.
   a. $(3x + 8) + (-4x - 9)$
   b. $(8a^2b + 6ab^2) + (4a^2b - 3ab^2)$

3. (We do) Subtract $s^2 + 3s - 4$ from $3s^2 - 5s - 3$

4. The cost of the materials for the inner packaging of a new product is determined by the expression $10x^2 + 8xy + y^2$. The cost of the outer packaging is $4x^2 - 3xy + 2$. Find the total cost of the packaging.

----------Lesson 11-1 Independent Practice/Lesson Check----------

EXERCISES

Simplify.

1. $(3b - 6) + (4b^2 - 6b + 10)$ _____
2. $(4a + b) + (2a - 3b)$ _____
3. $(7m^2 + 8mn - 9) + (2m^2 - 10mn + 1)$ _____
4. $(-3c^2 + 12cd - 7) + (5c^2 - 9cd + d)$ _____
5. $(7a^2 - 3a + 5) - (-a^2 + 4a - 10)$ _____
6. $(5b^2 + 7bc - 9c^2) - (b^2 + 9bc + 2c^2)$ _____
7. $(7t^2 - 5t) - (-4t^2 + 3t - 7)$ _____
8. $(7x^2 + xy - 3y^2) - (-4x^2 + 7xy + 12)$ _____
9. $(8j^2 - 4j + 10) + (2j^2 - 8j + 2)$ _____
10. $(-4m^2 + 2mn - n^2) - (2m^2 + 3mn - 18)$ _____
11. $(8k^3 - 6k^2 + 12) - (3k^3 + 5k + 10)$ _____
12. $(5ab^2 - 2ab + 4a^2b) + (-4ab + 2a^2b - 8)$ _____

Name:_____**Date:**_____**Period:**_____

11-2 Multiply by a Monomial

Standard

- B.A.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

Objective

- SWBAT write polynomials in standard form IOT multiply them.

Examples

1. (I do) Simplify
   a. $(8a)(3b)$ b. $(2x^2)(-5x)$

2. (We do) Simplify
   a. $3v(v^2 + v + 1)$ b. $12(a^2 + 3ab^2 - 3b^2 - 10)$

3. (They do) List 3 possible dimensions for a rectangle with area $12x^2y$.

----------Lesson 11-2 Independent Practice/Lesson Check----------

EXERCISES

Simplify.

1. $a(abc)$ _____ **2.** $(8xy)(9y^2z)$ _____

3. $(4m^2)(8mn^2)$ _____ **4.** $3b(b - 8)$ _____

5. $3m^2(m - 2n)$ _____ **6.** $x^2(a - b)$ _____

7. $-9d(d + 6)$ _____ **8.** $-2a^2b(3ab^2 - 7b)$ _____

9. $4x(x^2 + 3x - 6)$ _____

10. $7n^2(8m^2n - 7mn - 6n)$ _____

Name:_____Date:_____Period:_____

11-3 Divide & Find Factors

Standard

- B.A.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

Objective

- SWBAT extract factors IOT factor polynomials into a monomial factor and a polynomial factor.

Key Concepts

_____- a mathematical expression consisting of all the common factors.

Examples

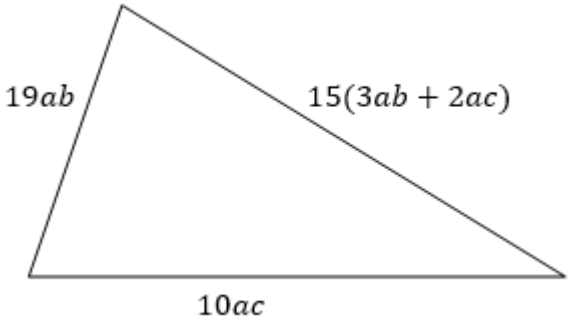
1. (I do) Find the factors.
   a. $4x + 2$ b. $2x + 6x^2$

2. (We do) Find the greatest common factor or GCF of $15xy^3$ and $3x^2y^2$

3. (We do) Factor to find the GCF and its paired factor.
   a. $7r^2 + 3rs + 2rt$ b. $h^2jk + jk^2l - 3klm$

4. (They do) List the dimensions for a rectangle with area $18x^2yz + 6xz$

5. Write, simplify and factor an expression for each perimeter below.



----------**Lesson 11-3 Independent Practice/Lesson Check**----------

EXERCISES

Find the GCF for each polynomial. Then find its paired factor.

1. $9x + 12$ _____ **2.** $a^2 + 4a$ _____

3. $7a^3 - 14a^2$ _____ **4.** $15y^4 + 12y^2z$ _____

5. $8x^5 - 5x^4 + 2x^3$ _____ **6.** $8x^{10} - 24x^5 + 6x^4$ _____

7. $27y^5 - 9y^3$ _____ **8.** $a^3b^2 - 3a^4b$ _____

9. $9y^4 - 3y^3 + y^2$ _____ **10.** $15k^3 + 5k + 10$ _____

11. $12x^4 + 6x^2 - 3x$ _____ **12.** $2f^3 - 18f^2 + 8f$ _____

13. $16m^5n + 4mn - 8mn^2$ _____

Name:_____Date:_____Period:_____

11-4 Multiply Binomials & Polynomials

Standard

- B.A.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

Objective

- SWBAT multiply binomials IOT expand them.

Key Concepts

_____- the product of two binomials that differ only in their signs.
$(a+b)(a-b) = a^2 - b^2$

Examples

1. (I do) Apply the foil method to multiply $(x+a)(2x+3b)$

2. (I do) The rectangular cover art for a new product has a length of $(x+1)$ and a width of $(x+5)$. Find the area of the cover art. Remember $A = lw$. Use the box method.

3. (We do) Multiply the perfect square $(10x+3y)(10x-3y)$.

4. (We do) Multiply $(3x-4)(3x^2+6x-2)$

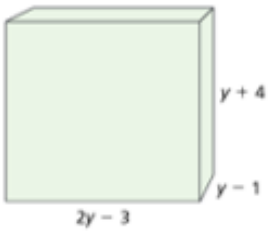
5. Multiply $(2x-1)(x-4)(x+5)$

----------Lesson 11-4 Independent Practice/Lesson Check----------

Simplify

1. $(2r+2)(3r-1)$
2. $(12x+4y)(10x-7y)$
3. $(4k+1)(k+3)-4k^2$
4. What is the formula for the volume of a rectangular prism? Use it to find the volume below.
5. Write, expand and simplify expressions for the volumes of the rectangular prisms.

a.



b.