

Adding and Subtracting Polynomials

Adding Polynomials:

$$(4x^2 + 8x - 9) + (-2x^2 + 11)$$

Subtracting Polynomials:

$$(4x^2 + 8x - 9) - (-2x^2 + 11)$$

Let $f(y) = 4y^3 + 5y - 2$, $g(y) = -5y + 12$, $h(y) = -y^2 + 7y - 1$, and $j(y) = 4y^2 + 6y + 5$.

Find the following:

1) $f(y) + h(y)$

2) $j(y) - f(y)$

3) $g(y) + f(y)$

4) $h(y) + j(y)$

More Examples:

1) Find the sum of $(2x^3 + 8x)$ and $(-7x^3 + 3x^2 + 11x)$.

2) Find the difference of $(8x^3 - 2x^2 + 14)$ and $(-y^3 + 4)$.

Adding and Subtracting Polynomials Practice

Simplify each expression.

1) $(2x^2 - 8x^4) - (4x^2 - 8)$

2) $(3 - 3b^4) + (8b^4 + 7b^2)$

3) $(4x^4 + 6x^3) + (6x^3 + 8x^4)$

4) $(6n^4 - 8) - (7 - 5n^4 - 7n^3)$

5) $(6k^2 - 7k^3) - (k - 7k^3 + 4k^2)$

6) $(5x^3 + x) + (x - 3x^3 - 3)$

7) $(6x^4 - 4x + x^2) + (2x - 2x^2 - 8x^4)$

8) $(5a^4 + 7 - 6a) - (8 + 8a^3 + 2a^4)$

9) $(8x^4 - 8 - 5x) + (5 - 5x^3 - 2x^4)$

10) $(8 - 3x + 5x^3) + (8x^4 - 8x^3 - 6) - (8x + 3x^4 - 5)$

11) $(4a^4 + 4a^2 - 5a) + (2 + a^2 + a) - (6a - 5a^3 + 8a^4)$

Multiplying Polynomials

When multiplying polynomials, use the _____!!

Remember, when multiplying _____, you _____ the exponents.

$$x \cdot x = x^2 \cdot x^3$$

Examples:

1) $5(x + 6)$

2) $x^2(x + 6)$

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

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

5) $(x + 9)(x - 3)$

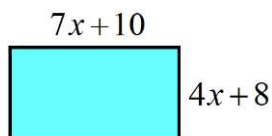
6) $(x + 3)(x - 3)$

7) $(2x + 5)(x + 6)$

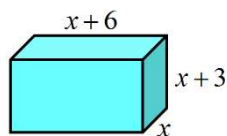
8) $(3x - 1)(2x - 4)$

9) $(5b - 6)(3b^2 - 2b + 5)$

10) Find the area of the rectangle below.



11) Find the volume of the following rectangular prism.



Multiplying Polynomials Practice

1) $5x^3(4x^2 - 3x + 1)$

2) $(x + 4)(x - 6)$

3) $(x + 9)(x - 9)$

4) $(3x + 1)(2x - 5)$

5) $(6x - 3)(4x - 1)$

6) $(8x + 7)(2x + 3)$

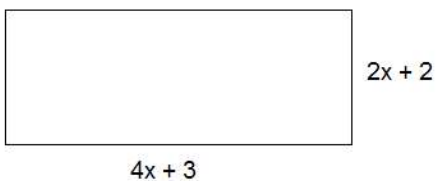
7) $(2x + 5)^2$

8) $(3x - 8)^2$

9) $(x + 5)(x^2 - 7x + 4)$

10) $(x - 3)(x^2 + 8x + 1)$

11) Write an expression for the perimeter and area of the following rectangle.



Perimeter:

Area: