

Name: _____

Date: _____

UNIT 2 • POLYNOMIAL FUNCTIONS

Lesson 1: Polynomial Structures and Operating with Polynomials

Practice 2.1.2: Adding and Subtracting Polynomials

Simplify each expression.

1. $(-x^2 + 10x^3 + 5x + 6) + (12x^2 - 8x + 7)$
2. $(14y^4 + 9y^2 - 8y - 19) + (18y^2 + 5y - 14)$
3. $(20x^4 + x^3 + 18) - (3x^4 + 14x^3 + 11x^2 + 2)$
4. $(11x^3 - 4x^2 + 19x) - (15x^3 + 13x^2 - 6x + 10)$
5. $(-10z^4 + 2z^3 + 14z^2 + 15) + (5z^2 - 17z - 13z + 8)$
6. $(-4x^3 + 3x^2 + 20) - (-17x^3 + 12x^2 - 6x^2)$
7. $(12h^2 - 9h - 15) - (3h^2 + 7h^2 + 8h + 10)$

The perimeter of a rectangle is the sum of its sides. Find the perimeter of a rectangle with each given length and width. All measurements are given in centimeters.

8. length: $x - 5$; width: $x + 10$
9. length: $x^2 + 1$; width: $4x$
10. length: $-8x + 24$; width: $2x + 3$

Name: _____

Date: _____

UNIT 2 • POLYNOMIAL FUNCTIONS

Lesson 1: Polynomial Structures and Operating with Polynomials

Practice 2.1.3: Multiplying Polynomials

Simplify each expression.

1. $(11x + 3)(-x^2 + 7)$
2. $(6x^2 + 5x^2 - 1)(2x^2 + 4)$
3. $(-y^2 + 10)(8y^2 + 2y)$
4. $(10x^2 + 4x^2)(2x^2 - 6x + 3)$
5. $(-3x^4 + 5x^2 - x^2)(x^2 - 6)$
6. $(7y^4 - 9y^4 + 2)(4y^3 + y^2 - 1)$
7. $(5x^2 + 4x + 3)(7x^2 - 5x - 2)$

The area of a rectangle is found using the formula *length* • *width*. Find the area of a rectangle with the given length and width. All measurements are given in meters.

8. length: $x + 8$; width: $3x - 2$
9. length: $x^2 + 1$; width: $4x + 10$
10. length: $6x + 5$; width: $2x^2 - 3$