Name _____ Date _____ Class _____

CHAPTER 12

At-Home Practice

Introduction to Polynomials

Determine whether each expression is a monomial.

1. $10x^2y^4$ _____

2. x^p _____

3. $-\frac{1}{3}a^5b$ _____

4. $3gt^{\frac{1}{2}}$ _____

Classify each expression as a monomial, a binomial, a trinomial, or not a polynomial.

5. $3m^2n^5$ _____

6. $\frac{1}{5}x^{5.2} - 12y$ _____

7. $8cd - 2c - 9d$ _____

8. $2x^2 + 4xy$ _____

Find the degree of each polynomial.

9. $x^3 + 4xy - 7$ _____

10. $p + 4p^2 + 2$ _____

11. $3 + 3a^3 - 2a^2$ _____

12. $y - 4y^3 - 2y^5$ _____

Identify the like terms in each polynomial.

13. $4a^2b - 2b + 3a^2 - 2a^2b$ _____

14. $2m^2 + mn - m$ _____

15. $6x^4y^3 - 3x^3y^4 + 2x^4y^3$ _____

Simplify the polynomial by combining like terms.

16. $3x^3 - 4x^2 + 2 - x^3 + 5x^2$ _____

17. $7a^2b^3 + 4a^2b - 2b^2a - 2a^2b - 5a^2b^3$ _____

Simplify the polynomial by using the distributive property.

18. $4(3m^2 - 2)$ _____

19. $2(2x^2 + 3x) - x^2 - 8x$ _____

Answers: 1. yes. 2. no. 3. yes. 4. no. 5. monomial. 6. not a polynomial. 7. trinomial. 8. binomial. 9. 3. 10. 2. 11. 3. 12. 5. 13. $4a^2b$ and $2a^2b$. 14. no like terms. 15. $6x^4y^3$ and $2x^4y^3$. 16. $2x^4 + x^2 + 2$. 17. $2a^2b^3 + 2a^2b - 2b^2a$. 18. $12m^2 - 8$. 19. $3x^2 - 2$.

Name _____ Date _____ Class _____

CHAPTER 12

Family Fun

Polynomial Derby

The collection of terms below includes three polynomials and their simplified form. See who can find them the quickest.

$3x^2 - 3xy + 1$	$10x^2 - 30$	$x^2 - 2x - 1$
$2(3x^2 - 10) + x^2 - 5$	$x^2 - 3xy$	$7x^2 - 2x - 1$
$-7x^2 - 2x - 1$	$-4xy + 3x^2 - 1 - 2x^2 + xy$	$5x^2 - 4$
$4x^2 - 5$	$3(2x^2 - 10) + x^2 + 5$	$x^2 - 4xy - 1$
$8x^2 + 2x - 1 - x^2$	$7x^2 - 2x - 1$	$7x^2 - 2x - 2$
$6x^2 - 20$	$7x^2 + 2x - 1$	$7x^2 + 15$
$2x^2 - 3xy - 1$	$8x^2 + 2x - 2 - 2x^2$	$2(3x^2 - 10) + x^2 + 5$
$x^2 - 3xy - 1$	$7x^2 - 15$	$2(3x^2 - 5) + x^2 + 5$

Answers: $2(3x^2 - 10) + x^2 + 5$ and $7x^2 - 15$; $-4xy + 3x^2 - 1 - 2x^2 + xy$ and $x^2 - 3xy - 1$; $8x^2 + 2x - 1 - x^2$ and $7x^2 + 2x - 1$