Name _____ Period _____

ACTIVITY 24 – ADDING AND SUBTRACTING POLYNOMIALS

LESSON 24-1 PRACTICE: Page 358 #s 16 – 23 (PAGE 15 IN NOTES):

For Items 16–20, use the polynomial $4x^3 + 3x^2 - 9x + 7$.

16. Name the coefficients of the terms in the polynomial that have variables.

17. List the terms, and give the degree of each term.

18. What is the degree of the polynomial?

19. Identify the leading coefficient of the polynomial.

20. Identify the constant term of the polynomial.
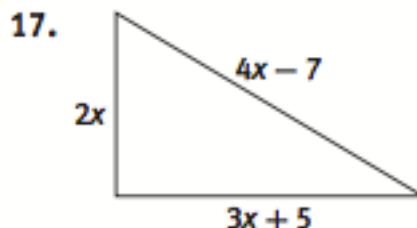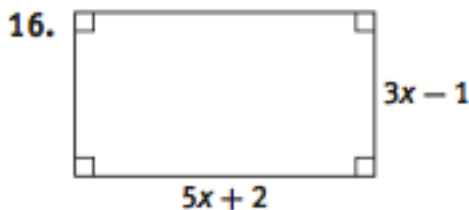
Write each polynomial in standard form.

21. $9 + 8x^2 + 2x^3$ **22.** $y^2 + 1 + 4y^3 - 2x$

23. Construct viable arguments. Is the expression $5x^2 + \sqrt{2}x$ a polynomial? Justify your response.

LESSON 24-2 PRACTICE: Page 363 #s 12 – 18 (PAGE 15 IN NOTES):

Add. Write your answers in standard form.

12. $(3x^2 + x + 5) + (2x^2 + x - 5)$

13. $(-4x^2 + 2x - 1) + (x^2 - x + 9)$

14. $(7x^2 - 2x + 3) + (3x^2 + 2x + 7)$

15. $(-x^2 + 5x + 2) + (-3x^2 + x - 9)$

Write the perimeter of each figure as a polynomial in standard form.

16.

$3x - 1$

$5x + 2$

17.

$2x$ $4x - 7$

$3x + 5$

18. Critique the reasoning of others. A student added the expressions $x^4 + 5x^2 - 2x + 1$ and $2x^4 + x^3 + 2x - 7$. Identify and correct the student's error.

$$x^4 + 5x^2 - 2x + 1$$
$$2x^4 + x^3 + 2x - 7$$
$$\overline{3x^4 + 6x^2 - 6}$$

LESSON 24-3 PRACTICE: Page 366 #s 6 – 12 (PAGE 16 IN NOTES):

Subtract. Write your answers in standard form.

6. $(2x^2 + 4x + 1) - (7x^2 - 3x - 4)$

7. $(x^2 + 3x - 9) - (x^2 + 2x - 8)$

8. $(9x^2 + x - 12) - (14x^2 - 7x - 2)$

9. $(x^2 + 3x - 6) - (5x - 6)$

10. $(y^4 + y^2 + 2y) - (-y^4 + 3)$

11. Write two polynomials whose difference is $6x + 3$.

12. Model with mathematics. A rectangular piece of paper has area $4x^2 + 3x + 2$. A square is cut from the rectangle and the remainder of the rectangle is discarded. The area of the discarded paper is $3x^2 + x + 1$. What is the area of the square?

ACTIVITY 25 – MULTIPLYING POLYNOMIALS

LESSON 25-1 PRACTICE: Page 375 #s 32 – 36 (PAGES 17/18 IN NOTES):

32. $(2x - 3)(x - 1)$ **33.** $(x + 7)(3x - 5)$

34. $(4x + 3)(2x + 1)$ **35.** $(6x - 2)(5x + 1)$

36. Critique the reasoning of others. A student determined the product $(x - 2)(x - 4)$. Identify and correct the student's error.

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

LESSON 25-2 PRACTICE: Page 378 #s 10 – 18 (PAGES 18/19 IN NOTES):

Determine each product.

10. $(x - 4)(x + 4)$

11. $(x + 4)^2$

12. $(y + 10)(y - 10)$

13. $(y - 10)^2$

14. $(2x - 3)^2$

15. $(2x - 3)(2x + 3)$

16. $(5x + 1)^2$

17. $(2y - 1)(2y - 1)$

<u>**LESSON 25-3 PRACTICE: Page 380 #s 13 – 23 (PAGES 20/21 IN NOTES):**</u>

Determine each product.

13. $x(x+7)$

14. $x(2x-5)$

15. $(y+3)(y+6)$

16. $(y+3)(y-6)$

17. $x(2x^2-5x+1)$

18. $(x-1)(2x^2-5x+1)$

19. $(2x-7)(5x^2-1)$

20. $(2x-7)(5x^2-3x-1)$

21. $(x+2)(x-3)(x+1)$

22. $(x+2)(2x-3)(2x+1)$

23. Attend to precision. A binomial of degree 2 and variable x and a trinomial of degree 4 and variable x are multiplied. What will be the degree of the product? Explain your reasoning.

3