Name_____ Per. _____ Date_____

Algebra 1 10.1/ 10.2 Worksheet

Adding, Subtracting, and Multiplying Polynomials

Show all work.

For questions 1 - 15, simplify:

Comp 1 Section 1

Adding Polynomials

1) $(3x^2 - 4x - 1) + (8x^2 - x + 6)$

$11x^2 - 5x + 5$

2) $(6x^2 - x - 4) + (2x^2 + 5x - 5)$

$8x^2 + 4x - 9$

3) $(4x^2 + 2x - 5) + (6x^2 - x - 5)$

$10x^2 + x - 10$

4) $(4x^2 - x - 7) + (2x^3 + 6x^2 - 11)$

~~$6x^2$~~ $2x^3 + 10x^2 - x - 18$

5) $(2x^3 - x + 4) + (5x^2 - 6x - 5)$

$2x^3 + 5x^2 - 7x - 1$

Section 2— Subtracting Polynomials

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

$2x^2 + 5x - 3$

7) $(2x^2 - 3x + 7) - (5x^2 + 3x + 6)$

$-3x^2 - 6x + 1$

8) $(7x^3 + 3x^2 + 4x + 10) - (10 + 8x + 3x^3)$

$4x^3 + 3x^2 + 12x$

9) $(5x^4 - 4x^3 - 3x - 4) - (2x - 6x^3 - 2x^4)$

~~$5x^4$~~

$7x^4 + 2x^3 - 5x - 4$

10) $(7x^3 - 9x^2 - 7x - 8) - (8 - 4x^2 - 6x^3)$

$-x^3 - 5x^2 - 7x - 16$

Section 3—Operations with Polynomials

11) $4(a + 5) - 5(a^2 - 4a + 7)$

$-5a^2 + 24a - 15$

12) $8(y + 6) - 6(y^2 - 6y + 4)$

$8y + 48 - 6y^2 + 36y - 24$

13) $3(c - 4) - 5(c^2 + 4c - 8)$

$-5c^2 - 17c + 28$

14) $2(y - 7) - 3(y^2 - 2y + 8)$

$-3y^2 + 8y - 38$

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

$-9x^2 + 32x + 3$

Comp 2 Section 1—Multiplying Polynomials Using the FOIL Process

16) $(x + 3)(x - 12)$

$x^2 - 9x - 36$

17) $(x - 1)(x - 10)$

$x^2 - 11x + 10$

18) $(x + 4)(x + 11)$

$x^2 + 15x + 44$

19) $(x + 3)(x - 4)$

$x^2 - x - 12$

20) $(x - 10)(x - 10)$

$x^2 - 20x + 100$

21) $(r - 11)(r + 11)$

$r^2 - 121$

22) $(m + 12)(m - 12)$

$m^2 - 144$

Section 2—Multiplying Polynomials Using the FOIL Process—Perfect Squares

23) $(x - 3)^2$

$x^2 - 6x + 9$

24) $(n + 4)^2$

$n^2 + 8n + 16$

25) $(m - 6)^2$

$m^2 - 12m + 36$

26) $(a + 7)^2$

$a^2 + 14a + 49$

27) $(b - 8)^2$

$b^2 - 16b + 64$

Section 3—Multiplying Polynomials Using the FOIL Process—with Two Variables

28) $(2x + 7y)(x + y)$

$2x^2 + 9xy + 7y^2$

29) $(3y - 5z)(y + z)$

$3y^2 - 2xy - 5z^2$

30) $(4x + 5y)(x + y)$

$4x^2 + 4xy + 5xy + 5y^2$

$4x^2 + 9xy + 5y^2$

31) $(3p - 4q)(p + q)$

$3p^2 - pq - 4q^2$

32) $(5c + 7d)(c + d)$

$5c^2 + 12cd + 7d^2$

Section 4—Multiplying Polynomials Using the FOIL Process—from Formulas

For questions 33 – 35, use the given rectangle to:

a) Write an expression for the area

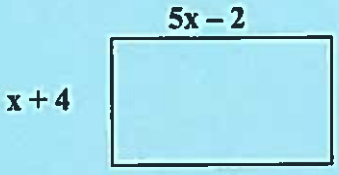
b) Represent the area as a polynomial

33)

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

$6x^2 + x - 2$

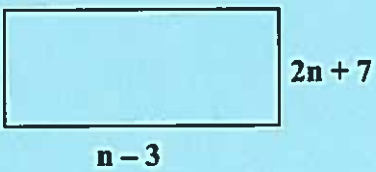
34)



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

$5x^2 + 18x - 8$

35)



$(2n+7)(n-3)$

$2n^2 + n - 21$