

**7<sup>th</sup> ADVANCED UNIT 17 REVIEW**

**SHOW WORK ON ALL PROBLEMS**

**Add or subtract as indicated.**

$$1. (2x + 5) + (x - 2) = \underline{3x + 3}$$

$$2. (3x^2 - 5x + 6) + (-x^2 - 2x - 4) = \underline{2x^2 - 7x + 2}$$

$$3. (2x + 5) - (x - 2) = \underline{x + 7}$$

$$4. (-2x^2 + 7x - 13) + (4x^2 - 11x + 5) = \underline{2x^2 - 4x - 8}$$

$$-2x^2 + 7x - 13 + 4x^2 - 11x + 5$$

$$5. (3x^2 - 5x + 6) - (-x^2 - 2x - 4) = \underline{4x^2 - 3x + 10}$$

$$6. (-2x^2 + 7x - 13) - (4x^2 - 11x + 5) = \underline{-6x^2 + 18x - 18}$$

$$-2x^2 + 7x - 13 - 4x^2 + 11x - 5$$

$$7. (6x^2 - 3x + 15) + (4x^2 + 6x - 10) = \underline{10x^2 + 3x + 5}$$

$$8. (7c - 6d - 4e) - (3c - 2d + 5e) = \underline{4c - 4d - 9e}$$

$$7c - 6d - 4e - 3c + 2d - 5e$$

$$9. (6x^2 - 3x + 15) - (4x^2 + 6x - 10) = \underline{2x^2 - 9x + 25}$$

$$10. (2x^2 + 3x - 7) - (7x^2 + 12) = \underline{-5x^2 + 3x - 19}$$

For #11 – 14, evaluate if  $x = 2$ ,  $y = -3$ , and  $z = -1$ .

11.  $4x^2 + 3xy + 10y$   
 $4(2)^2 + 3(2)(-3) + 10(-3)$   
 $16 + -18 + -30$

-32

12.  $x^2y$   
 $(2)^2(-3)$

-12

13.  $y^2 + 4y + z$   
 $(-3)^2 + 4(-3) + -1$   
 $9 - 12 - 1$

-4

14.  $-3xyz$   
 $-3(2)(-3)(-1)$   
 $-6 \quad 18$

-18

Know the definitions for the following terms:

15. Polynomials: 1 or more terms - one monomial or the sum or difference of monomials

16. Coefficient: The number multiplied by the variable in a monomial

17. Like Terms: Monomials with different coefficients but the same variables

18. Monomial: 1 Term - a number or product of numbers and variables with exponents that are whole numbers

19. Binomial: 2 Terms

20. Trinomial: 3 Terms

21. Constant: A value that doesn't change

Classify each of the following as monomial, binomial, or trinomial.

22.  $14x^3 - 5$  Binomial

23.  $8b^6 + 2b^5 - b^4$  Trinomial

24.  $-4x^7$  Monomial

25.  $17a^2b^2c^3$  Monomial

26.  $-48$  Monomial

**SIMPLIFY**

27.  $(4x + 5) + (-2x - 9)$

$2x - 4$

29.  $(x^2y^5)^3 = \frac{(x^2y^5)(x^2y^5)(x^2y^5)}{x^6y^{15}}$

28.  $(5x^2 - 4x + 8) - (2x^2 + 5x - 4)$

$3x^2 - 9x + 12$

30.  $-5(8y + 6) = \underline{-40y - 30}$

31.  $3y(5y^2 + 2y - 8) = \underline{15y^3 + 6y^2 - 24y}$

32.  $(3x - 2)(2x + 3) = \frac{6x^2 + 9x - 4x - 6}{6x^2 + 5x - 6}$

33.  $(3x)^2(6x^4) = \frac{(3x)(3x) = 9x^2(6x^4)}{54x^6}$

34.  $(-4x^3y^2)(-4x^2y^2) = \underline{16x^5y^4}$

35.  $4xy(3x^2 + 2y^3) = \underline{12x^3y + 8xy^4}$

36.  $(-2x^3y)(7x^2y^2)(-3y^4) = \underline{42x^5y^7}$

37.  $(2x - 4y)(x - 3y) = \frac{2x^2 - 10xy + 12y^2}{2x^2 - 6xy - 4xy + 12y^2}$

38.  $(y - 3)(y - 5) = \frac{y^2 - 8y + 15}{y^2 - 5y - 3y + 15}$

39.  $(x + y)(x - y) = \frac{x^2 - y^2}{x^2 - xy + xy - y^2}$

40.  $(x - 3)(4x + 7) = \frac{4x^2 - 5x - 21}{4x^2 + 7x - 12x - 21}$