Principles of Algebra Name/Date Clee / Today

ALL PROBLEMS CAN BE COMPLETED ON THIS WORKSHEET

WS 11A.1 – Classifying, Adding, & Subtracting Polynomials

#1-6, Classify each polynomial by number of terms and by degree.

1. $3x + 2$
   linear binomial
2. $x^2 + 3x^4 - 2 + 8x^3$
   quartic polynomial of 4 terms
3. $5a^3$
   cubic monomial
4. $x^2 + 5x + 4$
   quadratic trinomial
5. $4z^5 - 2z^4 + 3z^3 - 2z^2 - z - 1$
   quintic polynomial of 6 terms
6. 8
   constant monomial

#7-9, Write each polynomial in standard form.

7. $4 - 2n + 3n^2$
   $3n^2 - 2n + 4$
8. $8 + 2x$
   $2x + 8$
9. $x^2 + 3x^4 - 2 + 8x^3$
   $3x^4 + 8x^3 + x^2 - 2$

#10-15, Simplify. Write all answers in standard form.

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

$= 3x^2 + 4x^4 - 2x + 1 + 6x^4 + 9x^2 - 8 - 2x$

$= 10x^4 + 12x^2 - 4x - 7$

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

$= 3x^2 + 4x^4 - 2x + 1 - 6x^4 - 9x^2 + 8 + 2x$

$= -2x^4 - 6x^2 + 9$

12. $(2y^3 - 4y^2 + 3) + (8y^2 + 3y + 7y^3 - 5)$

$= 2y^3 - 4y^2 + 3 + 8y^2 + 3y + 7y^3 - 5$

$= 9y^3 + 4y^2 + 3y - 2$

13. $(2y^3 - 4y^2 + 3) - (8y^2 + 3y + 7y^3 - 5)$

$= 2y^3 - 4y^2 + 3 - 8y^2 - 3y - 7y^3 + 5$

$= -5y^3 - 12y^2 - 3y + 8$

14. $(4x^4 - 12x^3 + 2x^2 - 3x + 2) + (4x^4 + 2 + 2x^2)$

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

$= 8x^4 - 12x^3 + 4x^2 - 3x + 4$

15. $(4x^4 - 12x^3 + 2x^2 - 3x + 2) - (4x^4 + 2 + 2x^2)$

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

$= -12x^3 - 3x$