CP Algebra 2   Name _____

Unit 2 Test Review   Date _____Block _____

Write in Standard form; identify the leading coefficient, degree, number of terms, and name.

1. $-x^4 + 8x^3 + 1 + 2x$ 2. $-3x + 7x^3 - 1$

SF: _____   SF: _____

LC: _____   LC: _____

Degree: _____   Degree: _____

# of Terms: _____   # of Terms: _____

Name: _____   Name: _____

3. $1 - x$ 4. $8x + 2x^5 - 5x^3$

SF: _____   SF: _____

LC: _____   LC: _____

Degree: _____   Degree: _____

# of Terms: _____   # of Terms: _____

Name: _____   Name: _____

Add, subtract, or multiply. Write the solution in standard form.

5. $(6x - 7x^2) + (4x^2 + 6)$ 6. $(8 - 5x^2) - (7x^2 + 5)$

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

9. $(6x - 4x^4 + 5x^3) + (x^3 - 6x^4 + 7x)$ 10. $(6x^4 - x^3 + 5) - (2x^4 + 3x^3 - 1)$

11. $(5x + 3)(8x + 7)$

12. $(3x + 1)^3$

13. $(3x + 5)(7x - 4)$

14. $(4x + 5)(4x + 6)$

15. $(x - 2)^4$

16. $(4x + 2)(4x + 5)$

17. $(5x + 4)(4x^2 + 2x - 4)$

18. $(5x - 6)(5x^2 + 4x - 2)$

19. $(3x + 4)(5x^2 - 6x - 6)$

20. $(8x + 2)(3x^2 + 4x - 5)$

21. $(8x^2 + x - 4)(6x^2 - 6x - 4)$

22. $(6x^2 + 6x + 2)(3x^2 + 5x + 7)$

23. $(4x^2 - 7x - 7)(3x^2 + x + 4)$

24. $(8x^2 + 3x + 1)(3x^2 - 7x + 6)$

Factor Completely.

25. $x^2 - 19x + 90$

26. $x^2 - 3x - 70$

27. $4x^2 + 20x - 96$

28. $4x^2 + 12x - 40$

29. $6x^2 - 45x + 21$

30. $21x^2 + 33x - 90$

31. $15x^2 + 21x + 6$

32. $9x^2 + 3x - 12$

33. $4x^3 + 8x^2 + 7x + 14$

34. $16x^3 - 6x^2 - 8x + 3$

35. $7x^3 + 2x^2 + 42x + 12$

36. $5x^3 + 10x^2 - 7x - 14$

37. $4x^2 - 1$

38. $9x^2 - 25$

39. $100x^4 - 120x^2 - 36$

40. $18x^4 + 48x^2 + 32$

41. $27x^3 + 125$

42. $64x^3 + 27$

43. $8x^3 - 27$

44. $27x^3 - 1$

45. Write an expression of the volume of a rectangular prism that has a width of $(x + 3)$, a length of $(x - 2)$, and a height of $(x + 1)$ in standard form. Determine the volume of the box if $x = 4$.

46. Write an expression of the volume of a rectangular prism that has a width of $(2x - 1)$, a length of $(x + 4)$, and a height of $3x$ in standard form. Determine the volume of the box if $x = 2$

47. Write an expression of the volume of a rectangular prism that has a width of $(x - 1)$, a length of $(x - 2)$, and a height of $(x - 4)$ in standard form. Determine the volume of the box if $x = 5$

48. Write an expression of the volume of a rectangular prism that has a width of $(3x + 2)$, a length of $(2x)$, and a height of $(x + 4)$ in standard form. Determine the volume of the box if $x = 3$

50.   A bottom for a box can be made by cutting congruent squares from each of the four corners of a piece of cardboard that is 8.5" by 11".
a. Draw a picture that depicts the bottom of the box.
b. Express the volume of the bottom of the box as a polynomial in standard form.
c. Find the volume when x = 1.

51. Jill is making an open jewelry box out of a 18 inch square piece of wood. Her first step is to cut congruent squares from each corner.
a. Draw a picture that depicts Jill's jewelry box.
b. Express the volume of the jewelry box as a polynomial in standard form.
c. Jill is trying to decide if she should cut 3, 5, or 7 inch squares from the corners. Which should she cut to insure that she will have the biggest volume possible?
d. According to "c", what will the dimensions of the jewelry be?

52. Mark is wants to make an open treasure box for his little brother's pirate birthday party. The only material he has to work with a piece of cedar that is 10 foot by 12 foot.
a. If he must cut 4 equal squares from each corner of the cedar, draw a picture that depicts the treasure box.
b. Express the volume of the treasure box as a polynomial in standard form.
c. What will the volume of the treasure box be if Mark cuts 4 foot squares from each corner?

53. Grace is moving the Isle of Palms and running low on boxes. She found a 30 inch square piece of card board!
a. Assume that the box can be open; if she must cut 4 equal squares from each corner of the cardboard, draw a picture that depicts the moving box.
b. Express the volume of the moving box as a polynomial in standard form.
c. Grace is trying to decide if she should cut 3, 5, or 7 inch squares from the corners. Which should she cut to insure that she will have the biggest volume possible?
d. According to "c", what will the dimensions of the moving box be?