Chapter 6 Study Guide (6.4-6.5, and 6.7)

NOT HOMEWORK Name: _____ Date: _____ Period: _____

*****Know your vocabulary from this section**

6.4—Write each expression in radical form, or write each radical in exponential form.

1. $x^{\frac{1}{3}}$

2. $v^{\frac{2}{5}}$

3. $n^{\frac{2}{5}}$

4. $\sqrt{79}$

5. $\sqrt[4]{153}$

6. $\sqrt[3]{27m^6n^4}$

7. $\sqrt[4]{f}$

8. $\sqrt[3]{n^4}$

6.4—Evaluate each expression.

9. $81^{\frac{1}{4}}$

10. $1024^{\frac{1}{5}}$

11. $8^{\frac{5}{3}}$

12. $-256^{\frac{3}{4}}$

13. $(-64)^{\frac{2}{3}}$

14. $64^{\frac{2}{3}}$

6.4—Simplify.

15. $\sqrt[6]{64}$

16. $-\sqrt[4]{256}$

17. $\sqrt[5]{243x^{10}}$

18. $\sqrt[3]{64r^2w^{15}}$

19. $\sqrt{49m^2t^7}$

20. $\sqrt[3]{27x^8y^{12}}$

21. $\sqrt[3]{216p^3q^{11}}$

22. $\sqrt[3]{343d^6e^{14}}$

23. $\sqrt[3]{64r^2w^{15}}$

24. $\sqrt{d^8}$

25. $-\sqrt[4]{625s^5}$

26. $\sqrt[3]{216p^3q^9}$

27. $\sqrt{676x^4y^9}$

28. $\sqrt[3]{27x^9y^{10}}$

29. $-\sqrt{144m^8n^6}$

30. $\sqrt[5]{32x^7y^{10}}$

31. $\sqrt[6]{(m+4)^6}$

32. $\sqrt[3]{(2x+1)^3}$

33. $-\sqrt{49a^{11}b^{16}}$

34. $\sqrt[4]{(x-5)^8}$

6.5—Simplify by rationalizing.

35. $\sqrt{\frac{16x^3}{y^7}}$

36. $\sqrt{\frac{25x^2}{y^3}}$

37. $\sqrt{\frac{a^{12}}{b^9}}$

38. $\sqrt{\frac{2g^3}{5z}}$

39. $\sqrt{\frac{x^{12}}{y^{13}}}$

40. $\sqrt{\frac{12x^5}{y^{15}}}$

Chapter 6 Study Guide (6.2, 6.4-6.5, and 6.7)

NOT HOMEWORK Name: _____ Date: _____ Period: _____

***Know your vocabulary from this section

6.5—Simplify by multiplying radicals.

41. $3\sqrt{5yz} \cdot 8\sqrt{10yz}$

42. $16\sqrt[4]{27x^3y^2} \cdot \sqrt[4]{3xy^2}$

43. $2\sqrt{32a^3b^5} \cdot \sqrt{8a^7b^2}$

44. $6\sqrt{3ab} \cdot 4\sqrt{24ab^3}$

45. $5\sqrt{2x^8y^3} \cdot 5\sqrt{2x^5y^4}$

46. $3\sqrt[3]{36xy} \cdot 2\sqrt[3]{6x^2y^5}$

6.5—Simplify by adding & subtracting radicals.

47. $\sqrt{2} + \sqrt{8} + \sqrt{50}$

48. $\sqrt{12} - 2\sqrt{3} + \sqrt{108}$

49. $2\sqrt{48} - \sqrt{75} - \sqrt{12}$

50. $8\sqrt{5} - \sqrt{45} - \sqrt{80}$

51. $6\sqrt{20} + 8\sqrt{5} - 5\sqrt{45}$

52. $8\sqrt{48} - 6\sqrt{75} + 7\sqrt{80}$

6.5—Simplify by BOX-ing radicals.

53. $(2 + \sqrt{3})(6 - \sqrt{2})$

54. $(1 - \sqrt{5})(1 + \sqrt{5})$

55. $(3 - \sqrt{7})(5 + \sqrt{2})$

56. $(\sqrt{2} - \sqrt{6})(\sqrt{2} - \sqrt{6})$

57. $(\sqrt{5} - \sqrt{6})(\sqrt{5} + \sqrt{2})$

58. $(1 + \sqrt{6})(5 - \sqrt{7})$

6.5—Simplify by using the conjugate.

59. $\frac{3}{7-\sqrt{2}}$

60. $\frac{4}{3+\sqrt{2}}$

61. $\frac{\sqrt{5}}{8-\sqrt{6}}$

62. $\frac{\sqrt{3}}{\sqrt{5}-2}$

63. $\frac{3+\sqrt{2}}{2-\sqrt{2}}$

64. $\frac{3+\sqrt{6}}{5-\sqrt{2}}$

6.7—Solve each equation.

77. $\sqrt[5]{w-7} = 1$

78. $\sqrt{x-3} = \sqrt{x+4} - 1$

79. $2\sqrt{3x+4} + 1 = 15$

80. $\sqrt[4]{y-9} + 4 = 0$

81. $6 + \sqrt[3]{q-4} = 9$

82. $\sqrt{2d-5} = \sqrt{d-1}$

83. $\sqrt{6x-4} = \sqrt{2x+10}$

84. $\sqrt{x+1} - 1 = \sqrt{x}$

85. $\sqrt{2m-6} - 16 = 0$

86. $2\sqrt{4x+8} - 4 = 8$

87. $4\sqrt[3]{2x+11} - 2 = 10$

88. $\sqrt{x-1} = \sqrt{x} - 1$