Chapter 5 Test Review

Name: _____ Hour: _____

Factor the following expressions. If the expression is not factorable, write Not Factorable. 5.1 Day 1

1. $x^2 - x - 2$

2. $x^2 - 8x - 20$

3. $x^2 - 5x - 36$

4. $x^2 + 8x - 10$

5. $x^2 + 11x + 28$

6. $x^2 + 2x - 24$

Factor the following expressions. 5.1 Day 2

Factoring these requires you to "Slide & Divide" or to Factor out a Greatest Common Factor first. If the expression is not factorable write "not factorable".

7. $5x^2 + 18x + 9$

8. $6x^2 - 21x$

9. $10x^2 - x - 3$

10. $3x^2 + 2x - 8$

11. $2x^2 + 7x + 3$

12. $8x^2 - 14x - 4$

Solve the quadratic equations. If the equation is not factorable, write "Not Factorable". 5.1 Day 3

Get 0 on one side. Factor like you did above. Then set each factor equal to 0 and solve.

13. $x^2 + 8x - 9 = 0$

14. $2x^2 + x = 5$

15. $x^2 + 6x = 0$

16. $5x^2 + 12x + 4 = 0$

17. $2x^2 = 5x + 12$

18. $30x + 25 = -9x^2$

Simplify the following radicals. 5.2

19. $\sqrt{18}$

20. $\sqrt{150}$

21. $\sqrt{605}$

22. $\sqrt{6} * \sqrt{20}$

23. $\sqrt{180}$

24. $\sqrt{84}$

Solve the following equations using Square Roots. 5.2

25. $5x^2 - 4 = 16$

26. $(x + 2)^2 = 49$

27. $2(3x + 4)^2 - 5 = 45$

28. $\frac{3}{4}x^2 - 19 = 26$

29. $6(x - 5)^2 + 1 = 19$

30. $8 - 10x^2 = -22$

Simplify the following radicals (These should have *i* in the answer). 5.3 Day 1

31. $\sqrt{-16}$

32. $\sqrt{-98}$

33. $\sqrt{-448}$

34. $\sqrt{-363}$

Perform the indicated operation with the given complex numbers. 5.3 Day 1

35. $(5 - 8i) - (-2 + i)$

36. $6 + (18 - i) - (2 + 12i)$

37. $(4 + 6i) + (17 - 9i)$

38. $(-16 + 2i) + (13 - 2i)$

39. $(2 + 3i)(-1 + 5i)$

40. $-2i(4 + 9i)$

41. $(9 + i)(8 - 12i)$

Chapter 5 Test Review

Name: _____ Hour: _____

Divide the following complex numbers. 5.3 Day 2

42. $\frac{4+9i}{3i}$

43. $\frac{8+i}{6-4i}$

44. $\frac{2-i}{2+i}$

Solve the following equations using square roots. (Answers may have i in them) 5.3 Day 3

45. $(x+1)^2 = -121$

46. $(x-9)^2 - 2 = -82$

47. $-3(x+6)^2 = 36$

48. $-(6x+5)^2 + 4 = 76$

49. $-\frac{1}{2}(3x+8)^2 - 16 = 2$

Find the value that completes the square. You do not have to continue to solve. 5.4 Day 1

50. $x^2 + 10x + 21 = 0$

51. $x^2 - 5x = 12$

52. $x^2 + 6x + 9 = 0$

Complete the square for the following quadratic equations where $a = 1$. 5.4 Day 1

53. $x^2 - 9x - 5 = 23$

54. $x^2 + 10x + 29 = 0$

55. $x^2 - 14x + 9 = -60$

56. $x^2 - 20x = 60$

Complete the square for the following quadratic equations where $a \neq 1$. 5.4 Day 2

57. $5x^2 + 29x - 6 = 0$

58. $2x^2 - x - 6 = 0$

59. $-3x^2 + 4x + 15 = 0$

60. $-4x^2 + 24x - 100 = 0$

Use the quadratic formula to solve the following equations. 5.5 | $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

61. $-2x^2 + x + 5 = 0$

62. $4x^2 - 13x - 12 = 0$

63. $x^2 - 14x + 49 = 0$

Identify the transformations of the following quadratic functions in vertex form. 5.6 Day 1

64. $y = \frac{1}{2}(x + 3)^2 - 8$

65. $y = -3(x - 4)^2 + 12$

66. $y = (x + 2)^2$

67. $y = -x^2 - 6$

68. $y = 5(x + 7)^2 + 9$

Find the vertex of the following quadratic functions. 5.6 Day 2

69. $y = (x + 5)^2$

70. $y = -\frac{1}{2}(x - 14)^2 + 1$

71. $y = 9(x - 2)^2 - 9$

72. $y = 2x^2 - 12x + 5$

73. $y = x^2 + 4x + 5$

74. $y = -5x^2 + 10x - 7$