MATH 100 Name: _____

Worksheet: _____ Date: _____

ANSWER SHEET

Instructions: Place your answers to all problems on this sheet. Attach your work for the problems on the back. If answer doesn't fit on the answer sheet and is on your solution paper, indicate that in the answer slot below by writing "on solution paper".

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Worksheet 9

Section 9.1 – Solving Quadratic Equations by the Square Root Property

Solve each equation by using the square root property. Express all radicals in simplest form.

1. $x^2 = 49$
2. $b^2 = -4$
3. $d^2 - 250 = 0$
4. $x^2 = \frac{9}{25}$

Solve each equation by using the square root property. Express all radicals in simplest form.

5. $(x+4)^2 = 25$
6. $(y-9)^2 = 49$
7. $(3p-2)^2 - 28 = 0$
8. $(7p-4)^2 = -81$

Section 9.2 – Solving Quadratic Equations by Completing the Square

Solve each equation by completing the square.

9. $x^2 - 2x = 15$
10. $p^2 + 6p = 0$
11. $m^2 - 6m = -12$
12. $d^2 + 10d - 11 = 0$

Solve each equation by completing the square.

13. $2x^2 - 13x + 20 = 0$
14. $3n^2 - 7n + 2 = 0$

Simplify each of the following equations and then solve by completing the square.

15. $4y^2 + 6y = 2y + 3$
16. $6y^2 + 3y = 4y^2 + y - 5$
17. $(x-1)(x+2) = 4$

Section 9.3 – Solving Quadratic Equations by the Quadratic Formula

Write the equations in the form $a^2 + b^2 = c^2$

18. $3x^2 - 4x + 2 = 0$
19. $2x^2 + 7x = 0$
20. $3d^2 = 2d - 4$

Use the quadratic formula to solve each equation.

21. $3x^2 - 7x - 6 = 0$
22. $n^2 + 4n - 5 = 0$
23. $y^2 + 12y + 36 = 0$
24. $x^2 + 9 = -6x$
25. $\frac{1}{4}t^2 - \frac{1}{3}t + \frac{5}{12} = 0$

Section 9.4 – Complex Numbers

Write each number as a multiple of i

26. $\sqrt{-100}$
27. $\sqrt{-72}$
28. $\sqrt{-128}$

Add or subtract.

29. $(2+7i) + (4+9i)$
30. $(-11-5i) + (-7+12i)$

Find each product.

31. $2i(5-i)$
32. $(2+7i)(2-7i)$
33. $(5-3i)(2+i)$

Write each quotient in standard form.

34. $\frac{3}{2+i}$
35. $\frac{2+3i}{2+5i}$

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Solve each quadratic equation for complex solutions. Write the solution in standard form.

36. $(t+4)^2 = -1$ 37. $(2x-5)^2 = -8$ 38. $k^2 - 2k + 2 = 0$

Section 9.5 – More on Graphing Quadratic Equations

Give the coordinates of the vertex and sketch the graph of each equation.

39. $y = x^2 + 2$ 40. $y = (x-2)^2$ 41. $y = x^2 - 6x + 11$