

NAME: _____ Score _____/100
Please print

SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION

Circle T or F, whichever is correct. 3 pts. each for 1 – 12. 7 pts. each for 13 – 21.

1. T F Every quadratic equation in one variable has two solutions.
2. T F The complex component of $8 - 2i$ is $-2i$.
3. T F The norm of a complex number is a real number.
4. T F If both sides of an equation are squared, the resulting equation has the same solution set as the original equation.
5. T F The complex component of a complex number is a complex number.
6. T F Some quadratic equations have complex solutions.

Fill in each of the blanks to make the statements true.

7. A quadratic equation in one variable is an equation which may be written in the form _____ where a , b , and c are real numbers and a is not zero.
8. When both sides of an equation are squared the solution set of the resulting equation _____ the solution set of the original equation.
9. If $b^2 - 4ac = 0$, the quadratic equation $ax^2 + bx + c = 0$ has _____ solution.
10. State the Quadratic Formula.
11. The norm of $-5 - 3i$ is _____.
12. What is the solution set for $|3x - 7| = -5$? _____.
13. Compute the sum $(3 - 2i) + (-7 + 5i)$.
14. Compute the product $(3 - 2i)(-7 + 5i)$.
15. Compute the quotient $(3 - 2i) \div (-1 + 3i)$

16. Solve the equation $x^2 + x - 12 = 0$ by factoring.

17. Solve the equation $x^2 - 4x + 2 = 0$ with the Quadratic Formula.

18. Solve the equation $2x - 1 = \sqrt{2 - x}$.

19. Solve the equation $|2x - 5| = 8$

20. Solve the equation $x - 5\sqrt{x} + 6 = 0$

21. Solve the equation $\frac{1}{x-1} - \frac{2}{x^2} = 0$