Test Chapter 8 Algebra II Name _____

I. Multiple Choice

_____ 1. Which is equal to $\sqrt[4]{256x^{12}}$?

(A) $4x^3$ (B) $16x^6$ (C) $64x^3$ (D) $64x^8$

_____ 2. Which is equal to $16^{\frac{-1}{4}}$?

(A) $\frac{1}{2}$ (B) -2 C. $-\frac{1}{2}$ D. $\frac{1}{4}$

_____ 3. Which is equal to $10i^{40}$?

(A) -10 (B) 10i (C) 10 (D) -10i

_____ 4. Which is the ***simplest radical form of*** $\sqrt[9]{(-8)^3}$?

(A) $\sqrt[9]{512}$ (B) $-2\sqrt[9]{64}$ (C) -8 (D) -2

II. Free Response SHOW ALL WORK on your own paper!

5 – 7. Solve each radical equation

5. $\sqrt{x} = 8$

6. $\sqrt{x-4} - 2 = 1$

7. $\sqrt{x} + 1 = \sqrt{x+11}$

8 – 9. Solve the equations over the complex numbers

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

9. $x^2 + 20 = 0$

10 – 12. Write each expression in simplest radical form

10. $\sqrt[6]{64x^{12}}$

11. $\frac{3x}{\sqrt{5x}}$

12. $\sqrt{80}$

13 – 15. Identify the roots of the following equations. Do NOT solve!
Use one of the following three choices for your answers:

A) 2 complex roots
B) 2 unequal real roots
C) 1 double real root

13. $x^2 - 2x + 1 = 0$

14. $4x^2 + 5x + 3 = 0$

15. $x^2 + 6x = 9$

16 – 25. Simplify

16. $3\sqrt{5} + 7\sqrt{5}$

17. $\sqrt[3]{128} + \sqrt[3]{16}$

18. $\sqrt[3]{\dfrac{8x^4}{3y^2z}}$

19. (3 +2 i) + (7 – i)

20. $\dfrac{1}{1+\sqrt{6}}$

21. (6 – i) – (8 – 3i)

22. $\sqrt{-300}$

23. (2 – 5i) (4 + 3i)

24. i^{51}

25. $\dfrac{4}{2+i}$

Extra Credit:

Simplify: $\sqrt{4x^2 - 12x + 9}$