Name: _____ **Date:** _____ **Period:** _____ **ID: R**

Algebra II: Chapter 5 Review (5.5-5.6)

Short Answer

1. Factor out a GCF and then find all solutions.

   $7x^3 + 175x = 0$

2. Give a list of possible roots of the equation. DO NOT SOLVE.

   $-3x^4 - 8x^3 - x + 4 = 0$

3. Find all solutions of the equation. Show work algebraically.

   $x^4 - 24x^2 = 8x^3$

4. Find all solutions of the polynomial. Show work algebraically.

   $P(x) = 4x^3 - 19x^2 + 21x$

5. If a polynomial P(x) has 5 and $-4-i$ as roots,

   a. Name another root.

   b. What is the power (degree) of this polynomial?

   c. Write the P(x) in factored form.

   d. Write the polynomial in standard form.

6. If a polynomial P(x) has -2, 7, and $-\sqrt{5}$ as roots,

   a. Name another root.

   b. What is the power (degree) of this polynomial?

   c. Write the P(x) in factored form.

   d. Write the polynomial in standard form.

7. Write a polynomial that has $\frac{3}{4}$ and -5 as roots.

8. Write a polynomial with the roots of 2 (multiplicity of 3), and 5.

9. Write a polynomial that has -2, 7, and $6i$ as roots.

10. Write a polynomial that has 3, $\frac{-3}{5}$, and $\sqrt{2}$ as roots.

11. Is 4 a solution of the polynomial equation $2x^5 - 6x^4 - 5x^3 + 15x^2 - 7x + 21 = 0$? Show your work that answers this question. Use a complete sentence to explain your answer.