Algebra II Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lesson 6-5 & 6-6 Practice Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Hour\_\_\_\_\_\_\_\_\_\_\_

A polynomial equation with rational coefficients has the given roots. Find two additional roots.

1. $\sqrt{5} and-\sqrt{13}$ 2) $4- \sqrt{6} and \sqrt{2}$ 3) $1- \sqrt{10} and 2+ \sqrt{2}$ 4) $4-i and 3+7i$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 For each equation, state the number of complex roots, and the possible number of real roots. Also list the possible rational roots.

 5) 3x2 – 7 6) 2x5 – 4x4 – 4x2 + 5 = 0 7) x3 – 4x2 + 9x - 36

Number of complex roots:\_\_\_\_\_

Possible Number of

real roots;\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Possible rational roots:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of complex roots:\_\_\_\_\_

Possible Number of

real roots;\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Possible rational roots:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of complex roots:\_\_\_\_\_

Possible Number of

real roots;\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Possible rational roots:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve each equation by finding all the complex roots.

8) $t^{3}-6t^{2}+12t-8=0$ 9) $2x^{3}-7x^{2}-4x=0$

x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. $2x^{3}+x^{2}+1=0$ 11. $x^{3}-5x^{2}+5x-4=0$

x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12) $x^{3}-2x^{2}-3x+6=0$ 13. $x^{3}-3x^{2}+4x-12=0$

x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_