Algebra 2 Name_____

WS: 4.5 Extra Practice Date_____Block_____

List the possible rational roots of f using the rational root theorem.

1. $f(x) = x^4 - 2x^3 + 3x - 4$

2. $f(x) = 3x^5 + 2x + 8$

3. $f(x) = x^4 + 2x^2 - 24$

4. $f(x) = 8x^2 - 12x - 3$

5. $f(x) = 6x^4 - 3x^3 + x + 10$

6. $f(x) = 4x^3 + 5x^2 - 3$

Determine whether the given x-value is a zero of the function.

7. $f(x) = x^4 + 2x^3 + 5x^2 + 8x + 4$, $x = -1$

8. $f(x) = x^4 - x^3 - 8x^2 + 2x + 12$, $x = -2$

9. $f(x) = x^3 + 4x^2 + x + 4$, $x = -1$

10. $f(x) = 2x^3 - x^2 + 8x - 4$, $x = \dfrac{1}{2}$

Given one zero of the polynomial function, find the other zeros.

11. $f(x) = x^3 - 8x^2 + 5x + 14$; 2

12. $f(x) = x^3 + x^2 - 13x + 3$; 3

13. $f(x) = 12x^3 + 8x^2 - 13x + 3$; ½

14. $f(x) = 2x^3 + 11x^2 + 9x + 2$; -½

Find all of the zeros of the polynomial function. SHOW ALL WORK!

15. $f(x) = x^4 + 5x^3 + 5x^2 - 5x - 6$

16. $f(x) = x^3 - x^2 - 9x + 9$

17. $f(x) = 2x^3 - 5x^2 - 4x + 10$

18. $f(x) = 3x^3 - x^2 - 12x + 4$