Name:_____ Date:_____

PC: Polynomial Practice Ms. Loughran

1. If $f(3)=0$, then _____ is a factor of $f(x)$.

2. If $x+2$ is a factor of $f(x)$, then _____ is a zero of $f(x)$.

3. If $f(x)=(x-2)(x+1)(3x-1),$ then the zeros of $f(x)$ are: _____

4. If $f(5)=0,$ then a factor of $f(x)$ is: _____

5. If $2x-3$ is a factor of $f(x),$ then $f(\ \_\_\_\_\ )=0$

6. Show in 2 ways that $y-1$ is a factor of $y^3-3y^2+3y-1.$

7. Show 2 ways that $x-2$ is a factor of $x^5-32.$

8. Factors of x^3+x^2-4x-4 are $(x-2),(x+2)\text{and }(x+1).$ What are the zeros of the polynomial?

9. Given the zeros of $x^3-6x^2+11x-6$ are 1, 2, and 3. What are the factors of the polynomial? Check by multiplication.

10. Show that -3 is a zero of $f(x)=x^3+7x^2+7x-15$.

11. Given that $(x-1)$ is a factor of $f(x)=3x^3-4x^2-9x+10$ find all zeros of $f(x)$.

12. One root of $x^3+8x^2+11x-20=0$ is -5. Find the complete solution set of this equation.

13. Show that $(x+1)$ is a factor of $x^3-2x^2+3=0.$ Use this information to find the solution set of this equation.

14. One zero of $4x^3 - 11x^2 + 5x + 2$ is $-\frac{1}{4}$. Find the complete **factorization** of this polynomial and find the remaining zeros. (**THE COMPLETE FACTORIZATION OF A POLYNOMIAL WILL INCLUDE FACTORS WITH ONLY INTEGRAL COEFFICIENTS.)**