Warm Up: Unit 3 Polynomial Functions and Equations Algebra 2 Kitt

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_

**3.1 Monomials and Laws of Exponents**

*Directions: Simplify the monomials.*

1. $\frac{(a^{2}b^{2})^{4}}{(3ab)^{3}}$ 2. $\frac{2x}{3x^{2}}$ 3. $(-5a^{2}b^{4}c^{8})(a^{4}b^{6})$

**3.2 Characteristics and Operations on Polynomials**

*Directions: Rearrange the terms so that the polynomials are in descending order. State the a) degree; b) number of terms; c) the leading coefficient for each of the following polynomials.*

4.  5. 

*Directions: Perform the indicated operation on the polynomials.*

6. $\left(6x^{2}y+3xy^{4}+7+5xy^{4}\right)-(9x^{2}y+8y)$ 7. $\left(10a^{3}-6a^{2}b+7ab^{2}+b^{3}\right)-(5a^{3}+4a^{2}b-3ab^{2}-1)$

8. $(a-4b)^{2}$ 10. $(10r-6)(r+2s)$

**3.3 Long Division and Synthetic Division**

*11. Find the quotient using Long division:* $(x^{3}+4x-4)÷(x+2)$ *(Hint: Remember*$0x^{2}$*)*

*12. Find the quotient using synthetic division:* $(m^{3}-3m^{2}-18m+40)÷(m+4)$

**3.4 Factor and Solve Polynomial Equations**

*Directions: Factor and solve the Polynomial Equations*

13. $x^{4}-12x^{2}+27=0$ 14. $x^{3}+125=0$