Algebra I Review Sheet Rev 2013 Mathematician: _____
Unit 4-2: Exponents and Multiply Polynomials Date: _____ Per: _____

(Sect 8.1-8.3) Fill in the blanks.

1) Identify the parts of a^n. The '*a*' is called the _____. The letter *n* is called _____or _____.

2) The exponent on an expression like (8*y*) does not have an exponent. It is understood to be _____.

3) A number to the zero power is always_____.

4) To get rid of a negative exponent, remember to "_____AND _____."

5) To multiply exponents with like bases, _____ the exponents. "BASE, BASE. _____."

6) To multiply an exponent with two exponents, _____ the exponents. "POWER, POWER, _____."

7) To divide with like bases, _____ the exponents. When "we divide, we _____."

(Sect 8.1-8.3) Show and explain the following.

8) Show and explain how to develop the rule for multiplying exponents with like bases using the following example, $(3x^7)(4x^9)$

9) Show and explain how to develop the rule for raising a power to a power by using the following example, $3(m^4)^3$

10) Show and explain how to develop the rule for dividing exponents with like bases using the following example, $\frac{25x^3y}{10xy^7}$

(Sect 8.4) Convert.

11) Write 78,100 in Scientific Notation.

12) Write 7.5×10^{-5} in Standard Form.

Simplify Completely. Do not leave any answers with negative exponents. Use your own paper to show your work. Answers must be on this sheet of paper.

13) $8\left(x^3\right)^8$

14) $\frac{48a^3bc^5}{-6a^6b^3c^2}$

15) $9m^{-7}$

16) $\frac{(-2x)\left(6x^8\right)}{-4x^6}$

17) $x^4 \bullet x^5 \bullet x$

18) $\left(x^8y^4\right)^6$

19) $\frac{x^7y^5}{x^3}$

20) $\left(3x^2yz^3\right)^4$

21) $\left(-\frac{2}{3}\right)^{-2}$

22) $x^{-6}\cdot x^5$

23) $\frac{6}{7x^{10}}\cdot\left(\frac{r^5}{s}\right)^5$

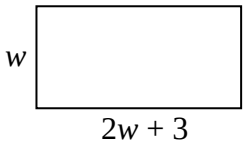
24) $\left(12a^2b^3c^7\right)^0$

25) $\left(6.3\times10^3\right)\left(1.9\times10^{-5}\right)$

26) $\frac{6.5\times10^9}{1.6\times10^{-4}}$

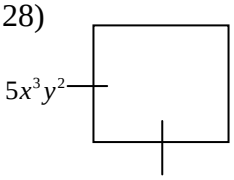
Solve.

27) Davis wants a new deck. She wants the length to be 3 more than twice the width (w). Write an equation that represents the **area** of her garden in terms of the width?



(Sect 9.3) Solve.

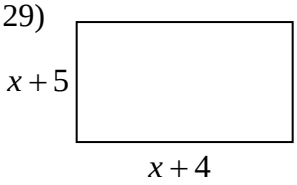
28)



Perimeter: _____

Area: _____

29)



Perimeter: _____

Area: _____

30) Name two ways that $(2x+3)(x+5)$ and $2x^2+13x+15$ are equal to each other through the graphing calculator. _____

31) If $y = x^4$, what is y when x^{32}? _____

(Sect 9.1) Establish whether the following is considered a polynomial. Label the appropriate names to these equations. Terms: Monomial, Binomial, Trinomial, etc…

32) $10^x + 2$ 33) $5x - 22$ 34) $x^4 + x + 1$ 35) $x^2 - 1$

(Sect 9.1-9.3) Simplify each polynomial. Write your answer in standard form.

36) $(5x-7)+(-4x^2+5x-1)$ 37) $(n^2+7)-(5n^2-6n+9)$

38) $(-x^2+7x+5)-(2x^2-3x-6)$ 39) $(x-5)(6x^2+x-6)$

40) $(x+1)(x+3)$ 41) $(x-4)^2$ 42) $(2a-3)(2a+3)$

43) $4(8q-5p^3q)$ 44) $8y(2y^2+3y)$ 45) $(2x-3)(3x+1)$