Module 6 RWS #2 If you were an Elf you'd be called:_____

#1, Evaluate each expression *without* a calculator:

a. 3^{-2} b. $7^{-9} \cdot 7^{9}$ c. $\left(\frac{6}{7}\right)^{-1}$ d. $\frac{12^5}{12^7}$ e. $\left(\left(3^2\right)^{-2}\right)^{-1}$

2. Write this with exponents: w • w• 3 • w• y • y• w • -4

3. Write a term with a coefficient of w, an exponent of y and a base of x

4. Order these numbers from least to greatest. 3.2×10^{-2}, 4.5×10^{-2}, 9.99×10^{-5}, 1.4×10^{7}

#5-7, Evaluate (calculator OK) if X = 4, M= -2, A = 3 and S = -1

5. $(XM - 1)^3$ 6. $(M + X)^M$ 7. $(MAS)^{-1}$

Use all of the rules of exponents to simplify the following:

8.. $(5y)^{-2}$ 9. $3x^{-4}$ 10. $w^3 \cdot w^4 \cdot w^5$ 11. $(3xy^2)(-2xy)$

12. $(4z^5)(2z^3)^2$ 13. $(3a \cdot 2b)^3$ 14. $(-m^2)^3$ 15. $\frac{x^6}{x^{10}}$

16. $x^3 \bullet \frac{2}{x^7}$ 17. $\frac{3x^2y^2}{3xy} \cdot \frac{6xy^3}{3y}$ 18. $\frac{4ab^3}{2b} \div \frac{5ab^{-3}}{a^2}$ 19. $\frac{-9x^5y^7}{x^2y^3} \cdot \frac{(2xy)^2}{-6x^2y^2}$

#20-22, Fill in what is missing to make the equation true.

20. $3^2 \cdot [?] = 3^{10}$ 21. $(w^5)\ [?] = \frac{1}{w^3}$ 22. $m^3 \cdot [?] = \frac{1}{m^7}$ 23. $(2x^3y)(\ ?\ ) = -6x^4y^5$

#24-27, Write each in scientific notation.

24. .00756 25. 43,210,000 26. 0.25 27. 800

#28-31, Write each as a decimal.

28. 4.78×10^{6} 29. 1.11×10^{-1} 30. 9.87×10^{5} 31. 3×10^{3}

32. Create a problem involving exponents that will simplify to the answer $\mathbf{4x^2y^5}$