

Name: \_\_\_\_\_

Unit 1

Date: \_\_\_\_\_

**WS #4 Mixed Exponents**

|    |     |
|----|-----|
| 22 | 100 |
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Simplify. Calculate powers with numerical bases. Express all powers with natural exponents.

1.  $(3x^5)(2x)$

=

2.  $(-5a^4)(3a^2)$

=

3.  $(3a^3b^2)(4ab)$

=

4.  $(2b^2c^3)(3b^5c^5)$

=

5.  $(7x)(3x^4)(-2x^2)$

=

6.  $(4x^5)(xy^3)(x^2y^3)$

=

7.  $\frac{(4x^3)(x^5)}{(4x)(-2x)}$

=

8.  $\frac{16a^2b}{4a^2b^2}$

=

9.  $\frac{(6x^3y)^2}{(2xy)^4}$

=

10.  $\left(\frac{2x}{y^2}\right)\left(\frac{x}{2y^2}\right)^2$

=

11.  $(3x)^2$

=

12.  $(4x^3y^4)^2$

=

13.  $\left(\frac{3x}{2x^4}\right)^2$

=

14.  $\left(\frac{2x^3}{y^4}\right)^2\left(\frac{7y}{x}\right)^3$

=

15.  $\frac{(2x)^2(x^2)^7}{(2x^4)^2}$

=

16.  $(-a^2)^3(2a^2)^2$

=

17.  $(-2x^2y)^3(x^4y^7)^2$

=

18.  $(-a^2b)(-3ab^4)(4ab^7)$

=

19.  $\left(\frac{-3}{b^2}\right)^2\left(\frac{4a}{b^2}\right)^3\left(\frac{a^7}{b^4}\right)$

=

20.  $(3x^2)^{-1}(2x^3)^{-2}$

=

21.  $(x^2y^{-4}z^6)^{-2}$

=

22.  $\left(\frac{a^4}{2b^{-2}}\right)^{-3}\left(\frac{(2b^2)^3}{a^8}\right)^{-2}$

=