

Exponent Operations Test Study Guide
Multiplication of Repeated Bases

Name _____ Per _____

1.) If two expressions have the same **base**, what happens to the exponents when the expressions are **multiplied**?

Example: $(7x^2)(2x^3)$

Part 2: Simplify each expression.

2.) $2^3 \cdot 2^4$

3.) $8^1 \cdot 8^3$

4.) $t^4 \cdot t^4$

5.) $x^5 \cdot x^9$

6.) $3^4 \cdot x^3 \cdot x^5$

Part 3: Find the product of the expressions. Simplify each expression completely.

7.) $(6x^2)(4x^2)$

8.) $(3x^3y^2)(-6y^5)$

9.) $(5p^3)(-m^8p^2)$

10.) $(10g^3h^8v^6)(11gh^8)$

11.) $(4f^9h^3)(-5f^6)(-3h^2)$

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

13.) *Challenge: $(3x^a y^b z^c)(-y^f z^g)$

Exponent Operations Worksheet #2

Name _____ Per _____

Power to a Power**Part 1: Expand each expression and write the product.**

Example:

$$(-4x^3y^7z)^2$$

Part 2: Find the product.

14.) $(2x)^2$

15.) $(10^2)^3$

16.) $(-3x^6)^5$

17.) $(7j^2)^3$

18.) $(8n^2p)^3$

19.) $2(3a^2)^3$

20.) $(xy)^2(x^2y^2)^2$

21.) $\left(\frac{8x^2}{2x^2}\right)^2$

22.) $\left(\frac{3x^2}{2y^2}\right)^5$

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

Exponents Operations Worksheet #3
Division

Name _____ Per _____

Example:

$$\frac{x^8}{x^3} =$$

Part 2: Simplify to find the quotients.

24.) $\frac{a^8}{a^3}$

25.) $\frac{7^{11}}{7^8}$

26.) $\frac{7 \cdot b^5}{b^4}$

27.) $\frac{x^{10}}{x^4}$

28.) $\frac{12 \cdot g^8 \cdot h^4}{g^3 \cdot h^5}$

29.) $\frac{4p^{11}}{8p^6}$

30.) $\frac{c^9}{6c^4}$

31.) $\frac{2x^3y^8}{4y^2}$

32.) $\frac{3x^{14}y^{11}}{18x^2}$

33. Challenge: (use all three skills)

$$\frac{8x^3(x^2)^8}{(-2x^6y)^2}$$

Part 3: Negative Exponents

34.) Anything to the zero power is _____.