

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

## Laws of Exponents

A) Simplify each Quotient and then find the Value of the Result:

1)  $\frac{10^6}{10^2}$

2)  $\frac{4^{17}}{4^{14}}$

3)  $\frac{9^{210}}{9^{207}}$

4)  $\frac{5^{23}}{5^{12}}$

5)  $\frac{2^{y+1}}{2^y}$

6)  $\frac{8^{r+4}}{8^{r+1}}$

B) Simplify Each Expression:

7)  $\left(\frac{x}{y}\right)^6$

8)  $\left(\frac{5c}{d^2}\right)^2$

9)  $\left(\frac{4d^3}{c^5}\right)^3$

10)  $\left(\frac{3w}{g^6}\right)^4$

11) 
$$\left(\frac{-4s^6}{t^3r^5}\right)^3$$

12) 
$$\left(\frac{-2d^{11}f^6}{c^{18}}\right)^2$$

13) 
$$\left(\frac{2d^4}{4e}\right)^3$$

14) 
$$\frac{-40s^6}{20s^3}$$

15) 
$$\frac{6r^3}{2r}$$

16) 
$$\frac{-16w^7r^2}{-4wr}$$

17) 
$$\frac{21d^{18}e^5}{7d^{11}e^3}$$

18) 
$$\frac{a^5b^5c^5}{-a^2b^3c^4}$$

19) 
$$\frac{4.2x^4y^{14}}{0.6x^9y^5}$$

20) 
$$\left(\frac{-24t^6}{8t^3}\right)^5$$

21) 
$$\left(\frac{d^{11}f^{16}}{d^6f^6}\right)^3$$

22) 
$$\left(\frac{7d^2}{14d^4}\right)^5$$