**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_**

**Dividing Monomials WS 463**

 **Simplify. Assume that no denominator is equal to zero.**

**1.** $\frac{6^{5}}{6^{4}}$ **2.** $\frac{9^{12}}{9^{8}}$ **3.** $\frac{x^{4}}{x^{2}}$ **4.** $\frac{r^{3} s^{2}}{r^{3} s^{4}}$

**5.**  $\frac{m}{m^{3}}$ **6.** $\frac{9d^{7}}{3d^{6}}$ **7.** $\frac{12n^{5}}{36n}$ **8.** $\frac{w^{4}u^{3}}{w^{4}u}$

**9.** $\frac{a^{3}b^{5}}{ab^{2}}$ **10.** $\frac{m^{7}n^{2}}{m^{3}n^{2}}$ **11.** $\frac{-21w^{5}u^{2}}{7w^{4}u^{5}}$ **12.** $\frac{32x^{8}y^{2}z^{5}}{-8xyz^{2}}$

**13.** $\left(\frac{4p^{7}}{7s^{2}}\right)^{2}$ **14.** $4^{-4}$ **15.** $8^{-2}$ **16.** $\left(\frac{5}{3}\right)^{-2}$

**17.** $\left(\frac{9}{11}\right)^{-1}$ **18.**$ k^{-1}$($l^{-6})\left(m^{3}\right)$ **19.** $k^{0}\left(k^{4}\right)(k^{-6})$ **20.** $\frac{h^{3}}{h^{-6}}$

**21.** $\frac{f^{-7}}{f^{4}}$ **22.** $\left(\frac{16p^{5}q^{2}}{2p^{3}q^{3}}\right)^{0}$ **23.** $\frac{f^{-5}g^{4}}{h^{-2}}$ **24.** $\frac{15x^{6}y^{-9}}{5xy^{-11}}$

**25.** $\frac{-15w^{0}u^{-1}}{5u^{3}}$ **26.** $\frac{48x^{6}y^{7}z^{5}}{-6xy^{5}z^{6}}$

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_**

**Dividing Monomials WS 464**

 **Simplify. Assume that no denominator is equal to zero.**

**1.** $\frac{8^{8}}{8^{4}}$ **2.** $\frac{a^{4}b^{6}}{ab^{3}}$ **3.** $\frac{xy^{2}}{xy}$ **4.** $\frac{m^{5}np}{m^{4}p}$

**5.** $\frac{5c^{2}d^{3}}{-4c^{2}d}$ **6.** $\frac{8y^{7}z^{6}}{4y^{6}z^{5}}$ **7.** $\left(\frac{4f^{3}g}{3h^{6}}\right)^{3}$ **8.** $\left(\frac{6w^{5}}{7p^{6}s^{3}}\right)^{2}$

**9.** $\frac{-4c^{2}}{24c^{5}}$ **10.** $x^{3}\left(y^{-5}\right)(x^{-8})$ **11.** *p*($q^{-2}$)($r^{-3}$) **12.** $12^{-2}$

**13.** $\left(\frac{3}{7}\right)^{-2}$ **14.** $\left(\frac{4}{3}\right)^{-4}$  **15**. $\frac{22r^{3}s^{2}}{11r^{2}s^{-3}}$ **16.** $\frac{-15w^{0}u^{-1}}{5u^{3}}$

**17.** $\frac{8c^{3}d^{2}f^{4}}{4c^{-1}d^{2}f^{-3}}$ **18.**$ \frac{-12t^{-1}u^{5}v^{-4}}{2t^{-3}uv^{5}}$ **19.** $\frac{6f^{-2}g^{3}h^{5}}{54f^{-2}g^{-5}h^{3}}$ **20.** $\left(\frac{x^{-3}y^{5}}{4^{-3}}\right)^{0}$

**21.** $\frac{r^{4}}{(3r)^{3}}$ **22.** $\frac{m^{-2}n^{-5}}{(m^{4}n^{3})^{-1}}$ **23.** $\frac{(j^{-1}k^{3})^{-4}}{j^{3}k^{3}}$ **24.** $\frac{(a^{-2}b)^{-3}}{5a^{2}b^{4}}$

**25.** $\left(\frac{q^{-1}r^{3}}{qr^{-2}}\right)^{-5}$ **26.** $\left(\frac{7c^{-3}d^{3}}{c^{5}de^{-4}}\right)^{-1}$ **27.** $\left(\frac{2x^{3}y^{2}z}{3x^{4}yz^{-2}}\right)^{-2}$

**28. BIOLOGY** A lab technician draws a sample of blood. A cubic millimeter of the blood contains $22^{3}$ white blood cells and $22^{5}$ red blood cells. What is the ratio of white blood cells to red blood cells?

**29. COUNTING** The number of three-letter “words” that can be formed with the English alphabet is $26^{3}$. The number of five-letter “words” that can be formed is $26^{5}$. How many times more five-letter “words” can be formed than three=letter “words”?