

## 8-2 Practice (Average)

### Dividing Monomials

Simplify. Assume that no denominator is equal to zero.

1.  $\frac{8^8}{8^4}$   **$8^4$  or 4096**

2.  $\frac{a^4b^6}{ab^3}$   **$a^3b^3$**

3.  $\frac{xy^2}{xy}$   **$y$**

4.  $\frac{m^5np}{m^4p}$   **$mn$**

5.  $\frac{5c^2d^3}{-4c^2d}$   **$-\frac{5d^2}{4}$**

6.  $\frac{8y^7z^6}{4y^6z^5}$   **$2yz$**

7.  $\left(\frac{4f^3g}{3h^6}\right)^3$   **$\frac{64f^9g^3}{27h^{18}}$**

8.  $\left(\frac{6w^5}{7p^6s^3}\right)^2$   **$\frac{36w^{10}}{49p^{12}s^6}$**

9.  $\frac{-4c^2}{24c^5}$   **$-\frac{1}{6c^3}$**

10.  $x^3(y^{-5})(x^{-8})$   **$\frac{1}{x^5y^5}$**

11.  $p(q^{-2})(r^{-3})$   **$\frac{p}{q^2r^3}$**

12.  $12^{-2}$   **$\frac{1}{144}$**

13.  $\left(\frac{3}{7}\right)^{-2}$   **$\frac{49}{9}$**

14.  $\left(\frac{4}{3}\right)^{-4}$   **$\frac{81}{256}$**

15.  $\frac{22r^3s^2}{11r^2s^{-3}}$   **$2rs^5$**

16.  $\frac{-15w^0u^{-1}}{5u^3}$   **$-\frac{3}{u^4}$**

17.  $\frac{8c^3d^2f^4}{4c^{-1}d^2f^{-3}}$   **$2c^4f^7$**

18.  $\left(\frac{x^{-3}y^5}{4^{-3}}\right)^0$   **$1$**

19.  $\frac{6f^{-2}g^3h^5}{54f^{-2}g^{-5}h^3}$   **$\frac{g^8h^2}{9}$**

20.  $\frac{-12t^{-1}u^5v^{-4}}{2t^{-3}uv^5}$   **$-\frac{6t^2u^4}{v^9}$**

21.  $\frac{r^4}{(3r)^3}$   **$\frac{r}{27}$**

22.  $\frac{m^{-2}n^{-5}}{(m^4n^3)^{-1}}$   **$\frac{m^2}{n^2}$**

23.  $\frac{(j^{-1}k^3)^{-4}}{j^3k^3}$   **$\frac{j}{k^{15}}$**

24.  $\frac{(2a^{-2}b)^{-3}}{5a^2b^4}$   **$\frac{a^4}{40b^7}$**

25.  $\left(\frac{q^{-1}r^3}{qr^{-2}}\right)^{-5}$   **$\frac{q^{10}}{r^{25}}$**

26.  $\left(\frac{7c^{-3}d^3}{c^5de^{-4}}\right)^{-1}$   **$\frac{c^8}{7d^2e^4}$**

27.  $\left(\frac{2x^3y^2z}{3x^4yz^{-2}}\right)^{-2}$   **$\frac{9x^2}{4y^2z^6}$**

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?  **$\frac{1}{484}$**

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”? **676**