

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**