

Name: _____ Date: _____ Period: _____

Chapter 8 Practice 1

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. $k^{-1}(l^{-6})(m^3)$

19. $k^0(k^4)(k^{-6})$

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. $\frac{48x^6 y^7 z^5}{-6xy^5 z^6}$

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Simplify. Assume that no denominator is equal to zero.

1. $\frac{8^8}{8^4}$

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

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

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

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

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

7. $\left(\frac{4f^3g}{3h^6}\right)^3$

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

9. $\frac{-4c^2}{24c^5}$

10. $x^3(y^{-5})(x^{-8})$

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

12. 12^{-2}

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

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

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

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

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

18. $\frac{-12t^{-1}u^5v^{-4}}{2t^{-3}uv^5}$

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

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

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

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

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

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

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

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

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

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”?