

## Exponent rules worksheet

Simplify and evaluate when possible.

1. $8^3 \times 8^4 = \underline{\quad}$	13. $(4^3e^2f^7)^0 = \underline{\quad}$	25. $(f^3g^5)4(fg^2)^4 = \underline{\quad}$
2. $z^{15} \div z^9 = \underline{\quad}$	14. $2^{-2}x = \underline{\quad}$	26. $(k^4m/k^2km^3)^3 = \underline{\quad}$
3. $(x^4)^5 = \underline{\quad}$	15. $4x^2 \times 2x^3 = \underline{\quad}$	27. $x^2y^3z^6/x^2y^3z^6 = \underline{\quad}$
4. $(de^2)^7 = \underline{\quad}$	16. $12x^6/3x^3 = \underline{\quad}$	28. $d^2/d^{-9} = \underline{\quad}$
5. $(b^8/c^3)^3 = \underline{\quad}$	17. $-(2^3)^3 = \underline{\quad}$	29. $2f^2(7f^5) = \underline{\quad}$
6. $(x^9)^0 = \underline{\quad}$	18. $(3^2y^5z^4)^2 = \underline{\quad}$	30. $36i^2j^4/6i^5j^2 = \underline{\quad}$
7. $g^{-5} = \underline{\quad}$	19. $(16f^3g^5/2f^2g^2)^3 = \underline{\quad}$	31. $(3^{-3})^2 = \underline{\quad}$
8. $y^4 \times y \times y^3 = \underline{\quad}$	20. $c^7/c^7 = \underline{\quad}$	32. $(4x^2y)4(2^2xy^2)^2 = \underline{\quad}$
9. $6^7 \div 6^5 = \underline{\quad}$	21. $6k^3/k^4 = \underline{\quad}$	33. $(9i^2j^5/3i^4j)^2 = \underline{\quad}$
10. $(4^2)^3 = \underline{\quad}$	22. $(6a^2)(3a^3) = \underline{\quad}$	34. $[(25a^2b^6c^9/5b^3c^4)-2(7c^4d^6)^2]^0 = \underline{\quad}$
11. $(5k^6)3 = \underline{\quad}$	23. $5c^4/25c = \underline{\quad}$	35. $20e^2f^5g^7/5e^{-4}fg^5 = \underline{\quad}$
12. $(3r^2/5s^4)^2 = \underline{\quad}$	24. $(y^4)^{-2} = \underline{\quad}$	

36. The objective lens of a microscope can magnify an object 103 times, and the eyepiece can further magnify an object 102 times. What is the maximum magnification on the microscope?
37. There are  $4 \times 10^{13}$  cells in the average person. There are  $7 \times 10^9$  people in the world. How many cells do all humans have together? Express the answer as a power.

## Answer Key

1. 2,097,152	13. 1	25. $f^{16}g^{28}$
2. $z^6$	14. $x/4$	26. $k^6/m^6$
3. $x^{20}$	15. $8x^5$	27. 1
4. $d^7e^{14}$	16. $4x^3$	28. $d^7$
5. $b^{24}/c^9$	17. -512	29. $14f^7$
6. 1	18. $81y^{10}z^8$	30. $6j^2/i^3$
7. $1/g^5$	19. $512f^3g^8$	31. $1/729$
8. $y^8$	20. 1	32. $2,048x^{10}y^8$
9. 36	21. $6k^7$	33. $9j^8/i^4$
10. 4,096	22. $18a^5$	34. 1
11. $125k^{18}$	23. $c^3/5$	35. $4e^6g^2/f^6$
12. $9r^4/25s^8$	24. $1/y^8$	

36.  $28 \times 10^{22}$

37.  $10^5$