

## Unit 5 Exponents + Scientific Notation

Simplify, if possible. Write your answer as a power or as a product of powers. There should be no negative exponents in your answer.

1. $2^3 \cdot 2^5$	2. $(y^2)^4$
3. $(-3x^3)^4$	4. $4^0$
5. $(-3a^3)^3 \cdot (4a)^0$	6. $(-a^3b^5)^2 (a^4b)^2$
7. $3^{-5}$	8. $\left(\frac{4}{7}\right)^{-2}$
9. $2^{-1} \cdot 2^5$	10. $x^0 y^{-4}$
11. $5x^{-2}$	12. $(-5x^{-3}y^5)^2$
17. $\frac{6x^{-2}y^2}{3y^{-4}}$	18. $(-2x^2)^{-3}(4x^8)$
19. $\frac{15x^3z^{-5}}{25y^{-4}}$	20. $\frac{m^{-5}}{m^7 \cdot m^{-4}}$

21. $\frac{-20xy^8}{3x^{-4}y^2} \cdot \frac{-5x^{-3}y^5}{(-2y)^3}$	22. $\left(\frac{4x^{-3}y^2}{6xy^{-3}}\right)^{-2} \cdot \frac{y^4}{x^6y^{-5}}$
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Write in Scientific Notation

23. 150 ,000	24. 0.000002
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Write in Standard Form

25. $2.5 \times 10^{-2}$	26. $3.069 \times 10^6$
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Multiply or Divide. Your final answer should be written in Scientific Notation.

27. $(2.6 \times 10^{-2})(1.6 \times 10^3)$	28. $(2.46 \times 10^4)(5.5 \times 10^5)$
29. $\frac{(4.9 \times 10^{-1})}{(5.5 \times 10^2)}$	30. $\frac{(4.56 \times 10^3)}{(1.35 \times 10^{-5})}$
31. $(2.3 \times 10^5) + (3.1 \times 10^5)$	32. $(4.6 \times 10^7) - (5.6 \times 10^6)$