

02 - Practice Problems: The Exponent Rules

For 1 – 14, simplify. Write answers without negative exponents.

1. $(3x^7)(7x^5)$	2. $(-7x^4y)(4x^8y^3)$	3. $(7x^7)(5x^5)$
4. $(-2x^3y^7)(-8x^4y^6)$	5. $(7a^2b^5c^{10})(3a^8b^2c)$	6. $\frac{x^8}{x^2}$
7. $\frac{10x^5}{5x^2}$	8. $\frac{2x^9}{16x^2}$	9. $\frac{3x^8y^{10}}{21x^2y^2}$
10. $\frac{-3x^5y^8}{-12x^5y^2}$	11. $(x^2)^7$	12. $(3x^4y^5)^3$
13. $(-5a^7b^2)^2$	14. $(-2x^4)^3$	

For 15 – 20, rewrite without negative exponents.

15. x^{-5}	16. $-7x^{-3}$	17. $-\frac{7y}{x^{-4}}$	18. $\frac{7}{-2x^{-5}}$	19. $\frac{x^{-8}}{y^{-4}}$	20. $\frac{x^4}{6y^{-5}}$
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For 21 – 31, simplify. Write answer without negative exponents.

21. $\frac{x^{10}}{x^4}$	22. $\frac{5x^2y^8}{25x^6y^3}$	23. $\frac{-15x^{15}y^7}{-3x^2y^8}$	24. $\frac{x^{-3}}{x^2}$
25. $\frac{(x^5)^2}{x^3}$	26. $\frac{(x^3)^{-2}}{x^4}$	27. $\frac{3x^4y^9z^0}{6x^4y^2}$	28. $\frac{w^5x^3}{w^5x^{-4}}$
29. $\frac{x^4x^8}{(x^2)^3}$	30. $\left(\frac{5x^3}{y^7}\right)^{-2}$	31. $\left(\frac{y^4}{2x^5}\right)^{-3}$	

Answers:

1. $21x^{12}$

2. $-28x^{12}y^4$

3. $35x^{12}$

4. $16x^7y^{13}$

5. $21a^{10}b^7c^{11}$

6. x^6

7. $2x^3$

8. $\frac{x^7}{8}$

9. $\frac{x^6y^8}{7}$

10. $\frac{y^6}{4}$

11. x^{14}

12. $27x^{12}y^{15}$

13. $25a^{14}b^4$

14. $-8x^{12}$

15. $\frac{1}{x^5}$

16. $-\frac{7}{x^3}$

17. $-7yx^4$

18. $-\frac{7x^5}{2}$

19. $\frac{y^4}{x^8}$

20. $\frac{x^4y^5}{6}$

21. x^6

22. $\frac{y^5}{5x^4}$

23. $\frac{5x^{13}}{y}$

24. $\frac{1}{x^5}$

25. x^7

26. $\frac{1}{x^{10}}$

27. $\frac{y^7}{2}$

28. x^7

29. x^6

30. $\frac{y^{14}}{25x^6}$

31. $\frac{8x^{15}}{y^{12}}$