

Exponents Review



Rules

Create Table in Notebook

Adding/Subtracting	Multiplying
Dividing	Negatives and Zero

Take note

Properties Properties of Exponents

- $a^0 = 1, a \neq 0$ **Zero Property**
- $\frac{a^m}{a^n} = a^{m-n}$ **Division Property**

- Multiplication Prop.** • $a^m \cdot a^n = a^{m+n}$
- Power to Power (Div.)** • $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$

- $a^{-n} = \frac{1}{a^n}$ **Negative Property**
- $(ab)^n = a^n b^n$ **Power to Power Prop. (Mult.)**
- $(a^m)^n = a^{mn}$ **Power to Power Prop. (Mult.)**

Example

Simplify and rewrite each expression using only positive exponents.

a. $(5a^3)(-3a^{-4})$ b. $(-4x^{-3}y^5)^2$

c. $\frac{4ab^6c^3}{a^5bc^3}$

Example 1 – Simplify: $\frac{(3x^4y^{-2})^{-3}}{(2x^3y^2)^{-2}}$

Example 2 – Simplify: $\frac{(3x^{-5}y^2)^0}{(4x^{-3}y^2)^{-2}}$

Example 3 – Simplify: $\left(\frac{3x^3y^{-2}}{4x^5y^{-3}}\right)^{-3}$

Example 5 –Simplify:
$$\frac{(6x^3y^{-2})^{-2}(3x^4y^{-5})^2}{(2x^4y^2)^{-3}}$$

SCAVENGER HUNT

- Teacher will give you a letter.
- Go to the letter card on the wall, write down the letter and the problem.
- Go back to your seat and work problem out.
- With the answer, go find it on the bottom of another card, write that letter down and problem and repeat process
- When you are done you should have all problems on the walls completed with the correct answer

(15 minutes)



Go to the link below and play the Jeopardy Game on Review of Exponents.

<https://drive.google.com/a/cms.k12.nc.us/file/d/0B7qmlnwReqRGb2NlbHN4ZFhRV1E/view?usp=sharing>

Put questions and work in your notebook.

When finished have teacher sign off for daily participation activity.

HOMEWORK

Algebra 2 Book
Pg. 360 #2, 4, 6, 8, 9, 11,
12,13, 14, 16, 17, 18, 19,

Simplify:

- | | | |
|-------------------------|---|--|
| 1. $3 \cdot 4^3$ | 15. $\frac{x^4y^6}{xy^2}$ | 27. $\frac{x^{-1}}{x^{-8}}$ |
| 2. $4x^3 \cdot 2x^3$ | 16. $\frac{x^2y^5}{xy^4}$ | 28. $\frac{52x^6}{13x^{-7}}$ |
| 3. $x^5 \cdot x^3$ | 17. $\left(\frac{4x^4y}{16xy^7}\right)^3$ | 29. $f^{-3}(f^2)(f^{-3})$ |
| 4. $2x^3 \cdot 2x^2$ | 18. $\left(\frac{5x^3y}{20xy^2}\right)^4$ | 30. $\frac{x^{-4}}{x^{-9}}$ |
| 5. $\frac{6^5}{6^7}$ | 19. y^{-7} | 31. $\frac{24x^6}{12x^{-8}}$ |
| 6. $\frac{x^4}{x^7}$ | 20. 7^{-2} | 32. $\frac{3x^2y^{-2}}{12x^6y^3}$ |
| 7. 8^0 | 21. $\frac{1}{x^{-3}}$ | 33. $(2x^3y^{-3})^{-2}$ |
| 8. $-(9x)^0$ | 22. $\frac{1}{2^{-4}}$ | 34. $\frac{2x^4y^{-4}}{8x^2y^3}$ |
| 9. $(y^4)^3$ | 23. $x^5 \cdot x^{-1}$ | 35. $(4x^4y^{-4})^3$ |
| 10. $(x^2y)^4$ | 24. x^{-6} | 36. $5x^2y(2x^4y^{-3})$ |
| 11. $\frac{6x^7}{2x^4}$ | 25. $x^9 \cdot x^{-7}$ | 37. $\left(\frac{-2a^2b^3c^6}{3a^2b^4c^7}\right)^{-4}$ |
| 12. $\frac{8x^5}{4x^2}$ | 26. $(j^{-13})(j^6)$ | 38. $\left(\frac{-2a^2b^3c^6}{3a^2b^4c^7}\right)^{-2}$ |
| 13. $(2cd^3)^2(cd)^5$ | | |
| 14. $(2fg^4)^4(fg)^6$ | | |

<http://www.cabrillo.edu/~sdecelle/Math2/ExponentSheet.pdf>

If Time Permits:
Play Exponent Jeoparday