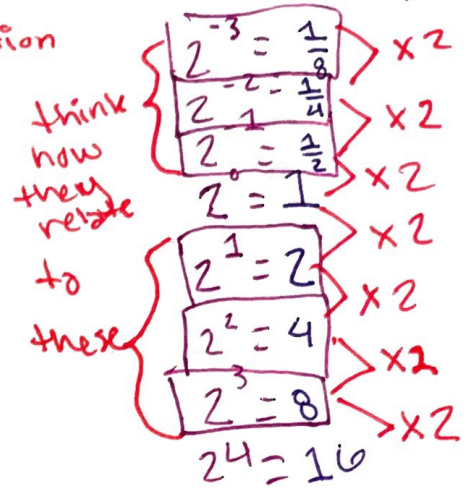


Working with Negative Exponents

Class Examples: Remember $x^{-a} = \frac{1}{x^a}$ and $\frac{1}{x^{-b}} = x^b$ *→ the fraction flips*

1) $\frac{4^{-2}}{1} \rightarrow \frac{1}{4^2} = \frac{1}{16}$

2) $\frac{-4a^3b^{-2}}{1} = \frac{-4a^3}{b^2}$



Simplify. Your answer should contain only positive exponents.

3) $3^3 \cdot 3^2 \cdot 3^4$

4) $3^2 \cdot 3^{-1}$

5) $2^3 \cdot 2^{-1}$

6) $2^2 \cdot 2^3$

7) $2x \cdot -4x^3$

8) $-4x^{-4} \cdot -x^{-4}$

9) $3b \cdot -b^3$

10) $-3x^{-3} \cdot 3x$

11) $-4u^{-3} \cdot 3u^3v^3$

12) $3x^4y^2 \cdot 2y^{-4}$

Class Examples:

13) $\frac{2x^{-1}}{4x}$

14) $\frac{4p^{-3} \cdot 4p^{-2}}{4p^2}$

Simplify. Your answer should contain only positive exponents.

15) $\frac{4v^4}{2v^2 \cdot v}$

16) $\frac{2m^{-3} \cdot m}{4m^{-1}}$

$$17) \frac{3n^{-2}}{4n \cdot 4n^3}$$

$$18) \frac{3k^3 \cdot 2k^3}{k^3}$$

$$19) \frac{3x^{-2} \cdot 4x^{-4}}{4x^2}$$

$$20) \frac{2n^3 \cdot 4n \cdot 2n^{-2}}{n^3}$$

$$21) \frac{n^{-4}}{4n^{-3} \cdot 2n^{-2}}$$

$$22) \frac{b^{-2}}{4b^3 \cdot 2b^4}$$

CLASS EXAMPLES: Simplify. Your answer should contain only positive exponents.

$$23) \frac{2m^4 \cdot 2m}{(m^3)^3} = \frac{4m^5}{m^9} = \frac{4}{m^4}$$

$$24) \frac{(n^0 \cdot 2n)^3}{n^{-4}} = \frac{(1 \cdot 2n)^3}{n^{-4}} = \frac{2^3 n^3 n^{-4}}{n^{-4}} = 8n^7$$

Simplify. Your answer should contain only positive exponents.

$$25) \frac{2m^0 \cdot (m^0)^4}{2m^2}$$

$$26) \left(\frac{a^0}{2a^4 \cdot a^3} \right)^0$$

$$27) \left(\frac{2vv^3}{2v^3} \right)^3$$

$$28) \frac{(2v)^{-4} \cdot 2v^{-3}}{2v^4}$$

$$29) \frac{n}{n \cdot (m^0)^4}$$

$$30) \frac{x^3 y^{-1} \cdot x^3 y^2}{(y^4)^4}$$

$$31) \frac{(2x^4 y^0)^3 \cdot 2y}{2y^{-2}}$$

$$32) \frac{xy \cdot x^4 y^3}{y^4}$$