

Write this expression so that there is ONLY negative exponents!

$$\frac{x^4 y^{-2}}{w^{-1} z^3} = \frac{z^{-3} y^{-2}}{w^{-1} x^{-4}}$$

Hwk #20

Sec 8-1

due tomorrow

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problems: 18, 19, 22, 25, 28-30, 40, 41

Rewrite each problem so that everything has a Negative exponent.

$$1. \frac{m^2 g^5}{c^7} \frac{c^{-7}}{m^{-2} g^{-5}} \quad 2. 8a^6 b^{-4} = \frac{b^{-4}}{8^{-1} a^{-6}}$$

$$3. \frac{x^{-3} y^7 z^1}{m^3 h^{-5}} = \frac{x^{-3} m^{-3}}{y^7 z^1 h^{-5}}$$

Is the value of each expression POSITIVE or NEGATIVE? Write POS or NEG

$$1. -5^2 - 1 \cdot 5^2 = -25 \quad 2. (-4)^8 \rightarrow \text{POS}$$

$$3. -(-6)^4 \text{ NEG} \quad 4. -2^3 = \text{NEG}$$

$$5. (-3)^5 = \text{NEG} \quad 6. -(-7)^9 \text{ POS}$$

$$7. (-6)^{-7} = \frac{1}{(-6)^7} = \frac{1}{\text{NEG}} = \text{NEG} \quad 8. (-10)^{-6} = \frac{1}{(-10)^6} = \text{POS}$$

Properties of Exponents in Chapter 8

- Zero and Negative Exponents $5b^{-3}c^0 = \frac{5}{b^3}$
- Multiplying powers with the same base $a^4a^7a = a^{12}$
- Raising a power to a power $(m^5)^8 = m^{40}$
- Raising a product to a power $(5a^3b^7)^2 = 25a^6b^{14}$
- Dividing powers with the same base $\frac{n^8}{n^2} = n^6$
- Raising a quotient to a power $\left(\frac{x^3}{y^7}\right)^4 = \frac{x^{12}}{y^{28}}$

Simplify each.

$$1. \quad c^3c^2 = c^5$$

$c \cdot c \cdot c \cdot c \cdot c$

$$2. \quad (5a^4)(2a^2) = 10a^6$$

$$3. \quad b^6b^3b^1 = b^{10}$$

Sections 8-3 and 8-4:

Multiplication Properties of Exponents

Multiplying Powers with the Same Base:

Add Exponents

Simplify:

$$\begin{aligned} (\underline{3}a^5b^{-7})(\underline{5}a^3b^2)(\underline{4}ab^3) &= 60a^9b^{-2} \\ &= \frac{60a^9}{b^2} \end{aligned}$$

Simplify:

$$(w^2)^5 = w^{2 \cdot 5} = w^{10}$$

Raising a Power to a Power:

Multiply exponents

Simplify:

$$(4e^3)^2 = 16e^6$$