Rules of Exponents from Chapter 8

Negative Exponents: Reciprocal

Zero as an exponent: Anything to the zero power equals ONE

Multiplying Powers with the same base: Add exponents

Raising a Power to a Power: Multiply exponents

Dividing Powers: Subtract Exponents

Product or Quotient to a Power: Everything on the inside of the parentheses is raised to the power on the outside.

Simplify each. Make sure your answers don't have any exponents that are negative or zero.

10. $(6E^5D^{-2})^{-2}(2E^{-2}D^4)^3$

$(6^{-2}E^{-10}D^4)(2^3E^{-6}D^{12})$

$= 6^{-2} \cdot 2^3 E^{-16} D^{16}$

$= \frac{8D^{16}}{36E^{16}} = \frac{2D^{16}}{9E^{16}}$

11. $((((w^4x^3)^2)^5)^3)^2$

$= w^{4\cdot2\cdot5\cdot3\cdot2} x^{3\cdot2\cdot5\cdot3\cdot2}$

$= w^{240}x^{180}$

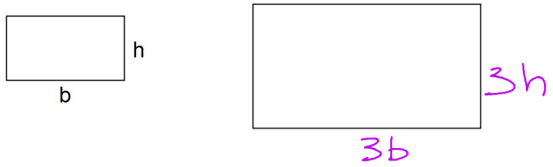
12. $((((\boxed{((a^8b^5)^3)^0})^4)^5)^6$

$= 1$

$= (((1)^4)^5)^6 = 1$

one to any power = 1

The dimensions of one rectangle are three times that of another rectangle. How many times greater is the area of the large rectangle compared to the area of the smaller rectangle?



1. Write an expression for the area of each rectangle.

small rect: A = bh large rect: A = $(3b)(3h) = 9bh$

2. How many times greater is the area of the large rectangle?

Large rectangle has any area that is 9 times greater

$$\frac{9bh}{bh} = 9$$

You can now finish Hwk #11

Sec 8-4 Due Tomorrow.

Pages 413-414

Problems 4-8, 13, 15, 17, 20-22, 51.

Simplify each. Make sure your answers don't have any exponents that are negative or zero.

1. $\frac{m^{12}}{m^6}$

$= m^{12-6}$

$= m^6$

2. $\frac{-18a^3}{6a^{10}} = -3\,a^{-7}$ ($-18 \div 6$; a^{3-10})

$= \frac{-3}{a^7}$

Section 8-5:

Dividing Properties of exponents:

Dividing Powers with the Same Base:

Subtract Exponents

Simplify each.

1. $\frac{A^{24}}{A^{8}}$ numerator exponent - denominator exponent:

result should be put in the NUMERATOR

$\frac{A^{24-8}}{1} = A^{16}$

2. $\frac{B^{4}}{B^{20}}$ denominator exponent - numerator exponent:

result should be put in the DENOMINATOR

$\frac{1}{B^{20-4}}$

$\frac{1}{B^{16}}$

Simplify each. Make sure your answers don't have any exponents that are negative or zero.

$\frac{28w^{8}c}{14w^{2}c^{6}} = \frac{2w^{6}c^{-5}}{1} = \frac{2w^{6}}{c^{5}}$

(28÷14, w^{8-2}, c^{1-6})

$\frac{8k^{8}m^{-4}}{12k^{-3}m^{-9}} = \frac{2k^{11}m^{5}}{3}$

($k^{8-(-3)}$, $m^{-4-(-9)}$)

$\frac{8\div4}{12\div4}$