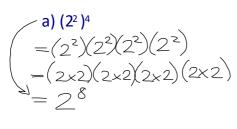
Homework Questions?? (Write them up here!)

(15)
a)
$$4 \times 10^{2} \times 2 \times 10^{3}$$

= $4 \times 2 \times 10^{2} \times 10^{3}$
= 8×10^{5}
 4×10^{5}
 4×10^{5}

1.7 B Exponent Laws (Power of a Power)

Ex. 1 Write as a single power, without changing the base.



$$\begin{pmatrix}
b) (3^3)^2 \\
= (3 \times 3 \times 3)(3 \times 3 \times 3) \\
= 3^6$$



Power of a Power

A base to the power of a power is the base to the product of the exponents

Ex. 2 Simplify

a)
$$(xy^2)^3$$

$$= \chi^3 y^6$$

b)
$$(2x^5)^4$$

= $2^4 \times 2^{\circ}$
= $16 \times 2^{\circ}$



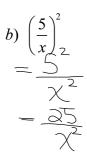
Power of a Product

The exponents is applied to each part of the base

$$(ab)^m = a^m b^m$$

Ex. 3 Simplify then evaluate if possible

$$a) \left(\frac{2}{3}\right)^3 = \frac{2^3}{3^3}$$
$$= \frac{8}{27}$$





Power of a Quotient

The exponents is applied to each part of the base

$$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$$

Ex 4: Simplify (using the laws of exponents) Be careful of the coefficients

Exponent Laws



Simplify (using the laws of exponents)

Multiplication

Division

Power of a Power $3m^2 \cdot 4m^5 = |@m^7| \quad 50m^8 \div 2m^3 = 25m^5 \quad (4m^3)^2 = |@m^6|$ Multiply the coefficients

Divide the coefficients

Exponent affects each part of the base

add exponents subtract exponents multiply exponents

Ex. 1 Simplify

a)
$$(a^2b^3)^4$$

$$= 0.8512$$

BEDMAS

c)
$$(-|x^3|^2(2x^4)^3)$$

$$= (+x^6)(8x^{12})$$

$$= 8x^{18}$$

BEDMAS

e)
$$\frac{(-3m^{2}n^{6})(2m^{4}n^{8})^{3}}{(4mn^{2})^{3}}$$

$$= \frac{(-3m^{2}n^{6})(8m^{(2}n^{24})^{24})}{64m^{3}n^{6}}$$

$$= \frac{-24m^{14}n^{30}}{64m^{3}n^{6}}$$

$$= -\frac{3}{8}m^{11}n^{24}$$

$$= -\frac{3}{8}m^{11}n^{24}$$

b)
$$(-4m^2)^3$$
= $(-4)^3 \text{ m}^6$
= -64 m^6

$$d) \frac{(5c^3d)(4c^2d^2)}{(2c^2d)^2} \leq Simplify$$

$$= \frac{20c^5d}{4c^4d^2}$$

$$= 5cd$$

f)
$$\frac{(2m^{3})^{4}}{24m^{5}}$$

$$= \frac{16m}{24m^{5}}$$

$$= \frac{2}{3}m^{7} \text{ or } \frac{2m}{3}$$

$$= \frac{2}{3}m^{7} - \frac{2m}{3}$$

$$= \frac{3m}{3}$$

$$= \frac{-3m}{3}$$

1.7B

p 127 # 5-10 (dont redo anything

you did Friday)

Handout 1.7 B

