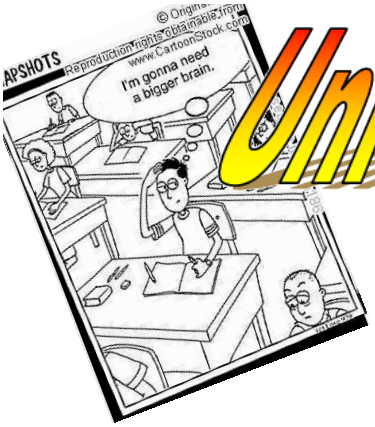
Curriculum Outcome

(N1) Demonstrate an understanding of powers with integral bases (excluding base 0) and whole number exponents by: representing repeated multiplication using powers; using patterns to show that a power with an exponent of zero is equal to one; solving problems involving powers.

(N2) Demonstrate an understanding of operations on powers with integral bases (excluding base 0) and whole number exponents.

Student Friendly:
Chapter 2 Test Review



Unit 2 Test Review

http://www.youtube.com/watch?v=dQ9A-o3dUlM

Warm Up

1) Simplify

$$\left(\frac{3^2}{3}\right)^4 - 2^5 \times 2^9 \div 2^6$$

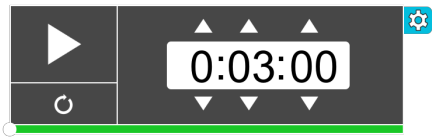
$= (3^1)^4 - 2^{14} \div 2^6$

$= 3^4 - 2^8$

$= \frac{(3^8)}{(3^4)} - 2^{14} \div 2^6$

$= 3^4 - 2^8$

SIMPLIFY ONLY



$$\left(\frac{6^8}{6^5}\right)^4$$

$$\frac{\left(9^6\right)^5 \times \left(9^7\right)^6}{\left(9^{11} \times 9^5\right)^4 \times 9^8}$$

See next page for answers

SIMPLIFY, THEN EVALUATE

$$\left(\frac{6^8}{6^5}\right)^4$$

OR

$$\left(\frac{6^8}{6^5}\right)^4$$

$$= (6^3)^4$$

$$= \left(\frac{6^{32}}{6^{20}}\right)$$

$$= (6^{12})$$

$$= (6^{12})$$

$$\frac{(9^6)^5 \times (9^7)^6}{(9^{11} \times 9^5)^4 \times 9^8}$$

$$= \frac{(9^{30}) \times (9^{42})}{(9^{16})^4 \times 9^8}$$

$$= \frac{9^{72}}{9^{64} \times 9^8}$$

$$= \frac{9^{72}}{9^{72}}$$

$$= 9^0$$

$$= 1$$

Simplify

$$\frac{(3^2)^6 \times (4^6)^4 \times (3^4)^5 \times (4^2)^7}{(4^3)^5 \times (3^4)^3 \times (4^9)^2 \times (3^2)^6}$$

$$= \frac{(3^2)^6 \times (4^6)^4 \times (3^4)^5 \times (4^2)^7}{(4^3)^5 \times (3^4)^3 \times (4^9)^2 \times (3^2)^6}$$

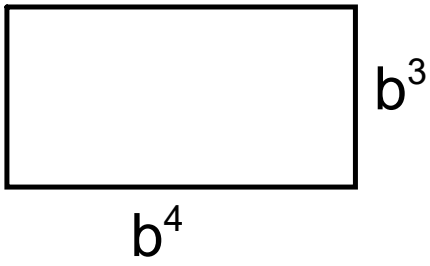
$$= \frac{(3^2)^6 \times (3^4)^5 \times (4^2)^7 \times (4^6)^4}{(3^2)^6 \times (3^4)^3 \times (4^9)^2 \times (4^3)^5}$$

$$= \frac{3^{12} \times 3^{20} \times 4^{14} \times 4^{24}}{3^{12} \times 3^{12} \times 4^{18} \times 4^{15}}$$

$$= \frac{3^{32} \times 4^{38}}{3^{24} \times 4^{33}}$$

$$= 3^8 \times 4^5$$

What is the Area and Perimeter of the following:



Area = base x height

Area = b^4 x b^3

Area = b^7

Perimeter = Side +Side +Side +Side

= b^3 + b^4 +b^3 + b^4

= $2b^3$ + $2b^4$

Test Outline

Unit 2: Powers and the Exponent Laws

Page 86
Study Guide

Powers

Base
Exponent
Repeated Multiplication
The Zero Exponent
Negative base rules
Powers of ten to Standard form and vice versa

Order of Operations

BEDMAS

Exponent Laws

Product of Powers
Quotient of Powers
Power of a Power
Power of a Product
Power of a Quotient

Exponent Laws

1) Zero Rule

-Anything raised to the exponent of zero is 1

$(-5)^0 = 1$ or $(x)^0 = 1$

2) Product of Powers Rule

When you multiply like bases you add the exponents

$(2)^3 \times (2)^5 = (2)^8$ or $(a)^m \times (a)^n = (a)^{m+n}$

3) Quotient Rule

When you divide like bases you Subtract the exponents

$\frac{(-4)^7}{(-4)^5} = (-4)^2$ or $(a)^m \div (a)^n = (a)^{m-n}$

4) Power to a Power Rule

With a power to a power we multiply exponents

$(2^5)^3 = (2)^{15}$ or $(a^m)^n = (a)^{mn}$

5) Power of Product Rule

With a power of products we multiply exponents

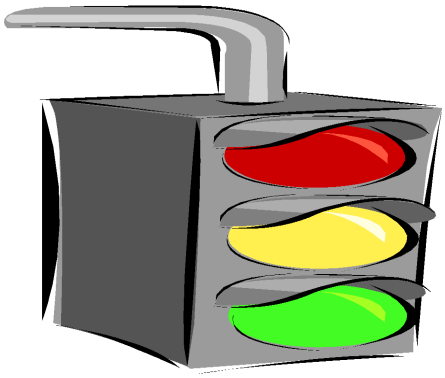
$[(5^5) \times (6^4)]^3 = 5^{15} \times 6^{12}$

or $[(a^m) \times (b^n)]^p = (a)^{mp} \times (b)^{np}$

6) Power of Quotient Rule

With a power of quotient we multiply exponents

$\left[\frac{(-3)^6}{(5)^3}\right]2 = \frac{(-3)^{12}}{(5)^6}$



REQUIRED

Test Review
WORKSHEETS
All Questions

Optional:

EXTRA REVIEW for T

Page 87-89

Questions:

1
3
7a,
8abc,
9,
10a
12,
13 ad,
14,
17,
18 bc,
19,
20 ac,
23 bd,
24,
26,
27,

And

Practice test

Page 90 all questions