Grade 9 Warm Up

Express each as a single power and then evaluate

1) $6^2 \times 6^4$

6^6

46656

2) $-2^3 \times 2^7$

$(-1)2^3 \times 2^7$

-2^{10}

-1024

3) $(-7)^2 \times (-7)^3$

$(-7)^5$

-16807

4) $\frac{12^{81}}{12^{79}} = 12^2$

$= 144$

5) $\frac{(-3)^{15}}{(-3)^{10}} = (-3)^5$

$= -243$

6) $\frac{(7)^5}{(7)^1} = 7^4$

$= 2401$

Remember to always use BEDMAS when evaluating

Simplify first (using exponent law I) THEN Evaluate each of the following:

1) $3^{10} \div 3^6 + 3^2$

$3^4 + 3^2$

81 + 9

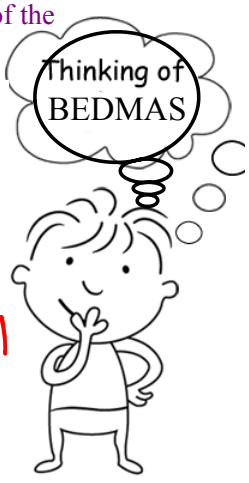
90

2) $-2^3(2^9 \div 2^7) - 2^1$

$-2^3(2^2) - 2^1$

$-2^5 - 2^1$

$-32 - 2 = -34$



3) $\frac{10^{1003}}{10^{1000}} - 1$

$10^3 - 1$

$1000 - 1$

999

Class/Homework

Worksheet -Simplifying Powers
Exponent law I

SEE attachement page for the sheet....click on the paperclip to view or print it

Master 2.20 **Extra Practice 4**

Lesson 2.4: Exponent Laws 1

1. Write each product as a single power.
   a) $4^3 \times 4^2$ b) $5^0 \times 5^0$ c) $(-2)^2 \times (-2)^4$
   d) $-6^3 \times 6^1$ e) $(-7)^0 \times (-7)^2$ f) $(-9)^6 \times (-9)^3$

2. Write each quotient as a single power.
   a) $8^7 \div 8^5$ b) $10^8 \div 10^0$ c) $(-1)^6 \div (-1)^3$
   d) $\frac{-3^4}{3^4}$ e) $\frac{(-9)^{10}}{(-9)^5}$ f) $\frac{11^9}{11^6}$

3. Express as a single power.
   a) $2^3 \times 2^6 \div 2^9$ b) $(-5)^8 \div (-5)^4 \times (-5)^3$ c) $\frac{6^3 \times 6^5}{6^2 \times 6^4}$

4. Simplify, then evaluate.
   a) $2^2 - 2^0 \times 2 + 2^3$ b) $(-2)^6 \div (-2)^5 - (-2)^5 \div (-2)^3$ c) $-2^2(2^3 \div 2^1) - 2^3$

5. Simplify, then evaluate.
   a) $4^3 \div 4^2 + 2^4 \times 3^2$ b) $3^2 + 4^2 \times 4^1 \div 2^3$ c) $\frac{3^4}{3^3} + \frac{4^2 \times 4^0}{2^4}$

6. Write each relationship as a product of powers or a quotient of powers.
   a) One million is 1000 times as great as one thousand.
   b) One billion is 1000 times as great as one million.
   c) One hundred is one-tenth of one thousand.
   d) One is one-millionth of one million.
   e) One trillion is 1000 times as great as one thousand million.

7. Identify, then correct any errors in these answers.
   Explain how you think the errors occurred.
   a) $5^3 \times 5^2 = 5^6$ b) $2^3 \times 4^2 = 8^5$ c) $(-3)^8 \div (-3)^4 = (-3)^4$
   d) $1^2 \times 1^4 - 1^3 = 1^3$ e) $\frac{4^2 \times 4^4}{4^2 \times 4^1} = 4^2$

Attachments

Exponent Law 1 Review.pdf