Grade 9 Warm Up

Express each as a single power and then evaluate

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

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

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

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

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

6) $\frac{(7)^5}{(7)}$

Evaluate:

1) $3(10^2 - 6^2) \div 2 + 1$

Grade 9 Warm Up

Express each as a single power and then evaluate

1) $6^2 \times 6^4$ $= 6^6$ $= 46656$	2) $-2^3 \times 2^7$ $= -2^{10}$ $= -1024$	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) $\frac{(7)^5}{(7)^1}$ $= (7)^4$ $= 2401$

Evaluate:

1) $3(10^2 - 6^2) \div 2 + 1$

$3(100 - 36) \div 2 + 1$

$3(64) \div 2 + 1$

$192 \div 2 + 1$

$96 + 1$

97

Laws

1) $x^0 = 1$

2) $(x)^a (x)^b = x^{a+b}$

3) $\dfrac{(x)^b}{(x)^a} = x^{b-a}$

Remember to always use BEDMAS when evaluating

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

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

$10^3 - 1$

$1000 - 1$

999

10^4 10^3 10^2 10^1 10^0

7 3 2 0 6

$(7\times10^4)+(3\times10^3)+(2\times10^2)+(6\times10^0)$

$(6 \times 10^5) + (5 \times 10^4) + (7 \times 10^3) + (4 \times 10^0)$

10^5	10^4	10^3	10^2	10^1	10^0
6	5	7	0	0	4

Class/Homework

MUST COPY OUT QUESTION AND THEN ANSWER

Page 76 & 77

Questions :6, 10acegi 11,13,17,18,19

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) $10^4 \div 10^0$ 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) $\frac{4^2 \times 4^4}{4^2 \times 4^1} = 4^2$

Class/Homework

MUST COPY OUT QUESTION AND THEN ANSWER

Page 76 - 78 really Important
Questions 10, 13, 17, 18, 19 Wed

Page 76 & 77
Questions :4aceg, 5bdfh, 7,8,10acegi,11 Tues

Worksheet -Simplifying Powers
Exponent law I Bonus

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

Attachments

Exponent Law 1 Review.pdf