

Name: _____

Period: _____

Notes 1-7

Int 1

Order of Operations with Exponents

Unit 1

Write each expression as an expression with exponents.

1) $8 \cdot 8$

8^2

2) $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$

7^5

3) $5 \cdot 5 \cdot 5 \cdot 5$

5^4

4) 11
 11^1

5) $12 \cdot 12 \cdot 12 \cdot 12 \cdot 12 \cdot 12 \cdot 12 \cdot 12$

12^8

6) $4 \cdot 4 \cdot 4$

4^3

Write each power as a multiplication expression.

7) 6^2
 $6 \cdot 6$

8) 3^3
 $3 \cdot 3 \cdot 3$

9) 2^4
 $2 \cdot 2 \cdot 2 \cdot 2$

10) 1^7
 $1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1$

11) 7^1
 7

12) 8^5
 $8 \cdot 8 \cdot 8 \cdot 8 \cdot 8$

Evaluate each exponent. Get 1# for the answer

16) $6^2 = 6 \cdot 6 = \boxed{36}$

17) 3^3
 $3 \cdot 3 \cdot 3$
 $9 \cdot 3 = \boxed{27}$

18) 2^4
 $(2 \cdot 2)(2 \cdot 2)$
 $4 \cdot 4 = \boxed{16}$

19) $1^7 = 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 = \boxed{1}$

20) $8^2 = 8 \cdot 8 = \boxed{64}$

21) $9^1 = \boxed{9}$

What is the value of a number raised to the zero power?

Ex: $3^0 = 1$

Any number raised to the zero power equals 1!

Find the Mistake

Use the space provided to correctly solve the following problems using the order of operations.

	<u>Problem</u>	<u>Correction</u>
1)	$\begin{aligned} & (6^2) \cdot 2 \div 4 \\ & (12) \cdot 2 \div 4 \\ & 24 \div 4 \\ & = 6 \end{aligned}$	$\begin{aligned} & 6^2 \cdot 2 \div 4 \\ 1) & 36 \cdot 2 \div 4 \\ & 72 \div 4 \\ & = \boxed{18} \end{aligned}$
2)	$\begin{aligned} & 8^2 - 5^2 \\ & (3^2) \\ & = 9 \end{aligned}$	$\begin{aligned} & 8^2 - 5^2 \\ 2) & 64 - 25 \\ & = \boxed{39} \end{aligned}$
3)	$\begin{aligned} & 4 + 18 \div 2 \cdot 3 \\ & (22) \div 2 \cdot 3 \\ & 11 \cdot 3 \\ & = 33 \end{aligned}$	$\begin{aligned} & 4 + 18 \div 2 \cdot 3 \\ 3) & 4 + 9 \cdot 3 \\ & 4 + 27 \\ & \boxed{31} \end{aligned}$
4)	$\begin{aligned} & -60 - 10 \cdot 2 \\ & (-60 - 20) \\ & = -40 \end{aligned}$	$\begin{aligned} & -60 - 10 \cdot 2 \\ 4) & -60 - 20 \\ & = \boxed{-80} \end{aligned}$
5)	$\begin{aligned} & 20 - 25 \div 5^2 \cdot (-2) \\ & 20 - 25 \div 25 \cdot (-2) \\ & (20 - 1) \cdot (-2) \\ & \rightarrow 19 \cdot (-2) \\ & = -38 \end{aligned}$	$\begin{aligned} & 20 - 25 \div 25 \cdot (-2) \\ 5) & 20 - 1 \cdot (-2) \\ & 20 - -2 \\ & \boxed{22} \end{aligned}$

Evaluate the following expressions using the order of operations.

$$1) 6 \cdot 3 \div 3^2 \cdot 2 + 4^0 =$$

$$6 \cdot 3 \div 9 \cdot 2 + 1$$

$$\xrightarrow{18 \div 9 \cdot 2 + 1}$$

$$2 \cdot 2 + 1 = 4 + 1 = \boxed{5}$$

$$2) 8[(3^3 + 9) - 4(3 + 2)] =$$

$$8[(27 + 9) - 4(5)]$$

$$8[36 - 20]$$

$$8[16] = \boxed{128}$$

$$3) 35 + \frac{50 + 25}{5^2} = 35 + \frac{75}{25} = 35 + 3 = \boxed{38}$$

$$4) 8^3 - 5(5 + 9 \div 3) =$$

$$8 \cdot 8 \cdot 8$$

$$512 - 5(5 + 3)$$

$$512 - 5(8) = 512 - 40 = \boxed{472}$$

In the problems below, insert operation symbols (+, -, \cdot , \div) and parenthesis so that the equation is correct. You cannot change the order of the numbers. * There are multiply ways to do these!

$$5) (5 \cdot 4) + 3 - 2 - 1 = 20$$

$$\xrightarrow{(20) + 3 - 2 - 1 = 20}$$

$$23 - 2 - 1$$

$$21 - 1$$

$$20$$

$$= 20$$

$$6) (5 + 4) \cdot (3 + 2) \cdot 1 = 45$$

$$(9) \cdot (5) \cdot 1$$

$$45 \cdot 1$$

$$45 = 45$$

✓