Unit 2 Test Review

1)

Write the BASE and the EXPONENT of these powers:

a) 3^5

Base: 3

Exponent: 5

b) $(-2)^8$

Base: -2

Exponent: 8

c) -1.6^7

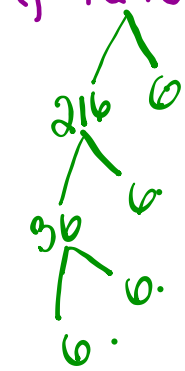
Base: 6

Exponent: 7

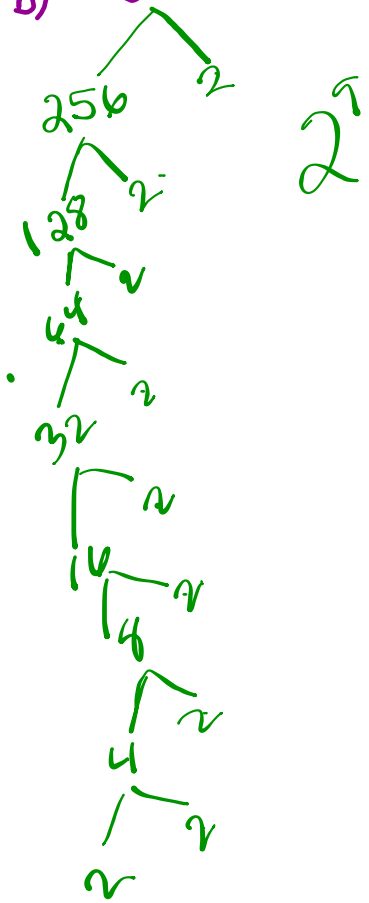
2)

Write the following as the respecting base:

a) $1296 = 6^4$



b) $512 = 2^9$



Evaluate $-(-2)^3$

[8] -8 16 -16

3)Write the following in standard form

$(6 \times 10^4) + (7 \times 10^2) + (9 \times 10^5) + (4 \times 10^0)$

$60000 + 700 + 900000 + 4$

960704

4) Write the following numbers using powers of 10

530 281

$(5 \times 10^5) + (3 \times 10^4) + (2 \times 10^2) + (8 \times 10) + (1 \times 10^0)$

5) Simplify then evaluate

a) $[-1(3)^2]^5$

$-1(3)^{10}$

-59049

b) $5^7 \div 5^3 - 2^4 \times 2^3$

$5^4 - 2^7$

$625 - 128$

497

c) $(-3)^1 \times (-3)^2 + (-3)^5 \div (-3)^0$

Add exp. Sub exp.

$(-3)^3 + (-3)^5$

$-27 + -243$

-270

Simplify

Evaluating using BEDMAS

d) $\left[\frac{(-2)^7 \times (-2)^8}{(-2)^6 \times (-2)^5}\right]^2$

BEDMAS

$\left[\frac{(-2)^{15}}{(-2)^{11}}\right]^2$

$\left[(-2)^4\right]^2$

$(-2)^8 = 256$

Simplify

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

$$\frac{7^6 \times 5^{12} \times 7^{15} \times 5^{12}}{5^8 \times 7^6 \times 5^8 \times 7^{12}} = \frac{5^{24} \times 7^{21}}{5^{16} \times 7^{18}}$$

$$= 5^8 \times 7^3$$

$$= 390625 \times 343$$

$$= 133,984,375$$

show your work

$[3 \times 5]^2 = 3^2 \times 5^2$

$$\frac{[3 \times 5]^2 - 7^2 + 3 \times 8 \div 2}{-(20)^0 - 1}$$

$\frac{15^2 - 7^2 + 3 \times 8 \div 2}{-1-1} = \frac{225 - 49 + 3 \times 8 \div 2}{-2}$

$= \frac{225 - 49 + 12}{-2}$

$= \frac{188}{-2} = \boxed{-94}$

1) $\frac{(3^2)^4}{3} - 3^3 + (2^0 \times 2^3)^2$

$\frac{(3^2)^4}{3} - 3^3 + (2^3)^2$

$\frac{3^8}{3^1} - 3^3 + 2^6$

$3^7 - 3^3 + 2^6$

$2187 - 27 + 64$

$\boxed{2224}$

Remember it is all the top divided by all the bottom →

$$\frac{(-2)^4 - (-2) \times 10 - (8)^0}{-5} + \frac{1}{4}$$

Exponents first

$$= \frac{16 - (-2) \times 10 - 1}{-5} + \frac{1}{4}$$

Multiplication

$$= \frac{16 - (-20) - 1}{-5} + \frac{1}{4}$$

Add the numerators (but watch your signs)

$$= \frac{16 + 20 - 1}{-5} + \frac{1}{4}$$

$$= \frac{35}{-5} + \frac{1}{4}$$

Reduce

$$= \frac{-7}{1} + \frac{1}{4}$$

Find Common Denominators and Add

$$= \frac{-28}{4} + \frac{1}{4}$$

$$= \frac{-27}{4}$$

$5^3 + [10 - 5]^2$

EVALUATE

$$\frac{2^5 \times (10-7)^3 + 9^0}{-3^5 \times (-5)^2 + (5-6)^5}$$

$5^3 + [10 - 5]^2$

$5^3 + [5]^2$

$125 + 25$

150

EVALUATE

$$\frac{2^5 \times (10-7)^3 + 9^0}{-3^5 \times (-5)^2 + (5-6)^5}$$

$$\frac{2^5 \times (3)^3 + 9^0}{-3^5 \times (-5)^2 + (-1)^5}$$

$$\frac{32 \times 27 + 1}{-243 \times 25 + -1}$$

$$\frac{32 \times 27 + 1}{-243 \times 25 + -1}$$

$$\frac{864 + 1}{-6075 + -1}$$

$$\frac{865}{-6076}$$

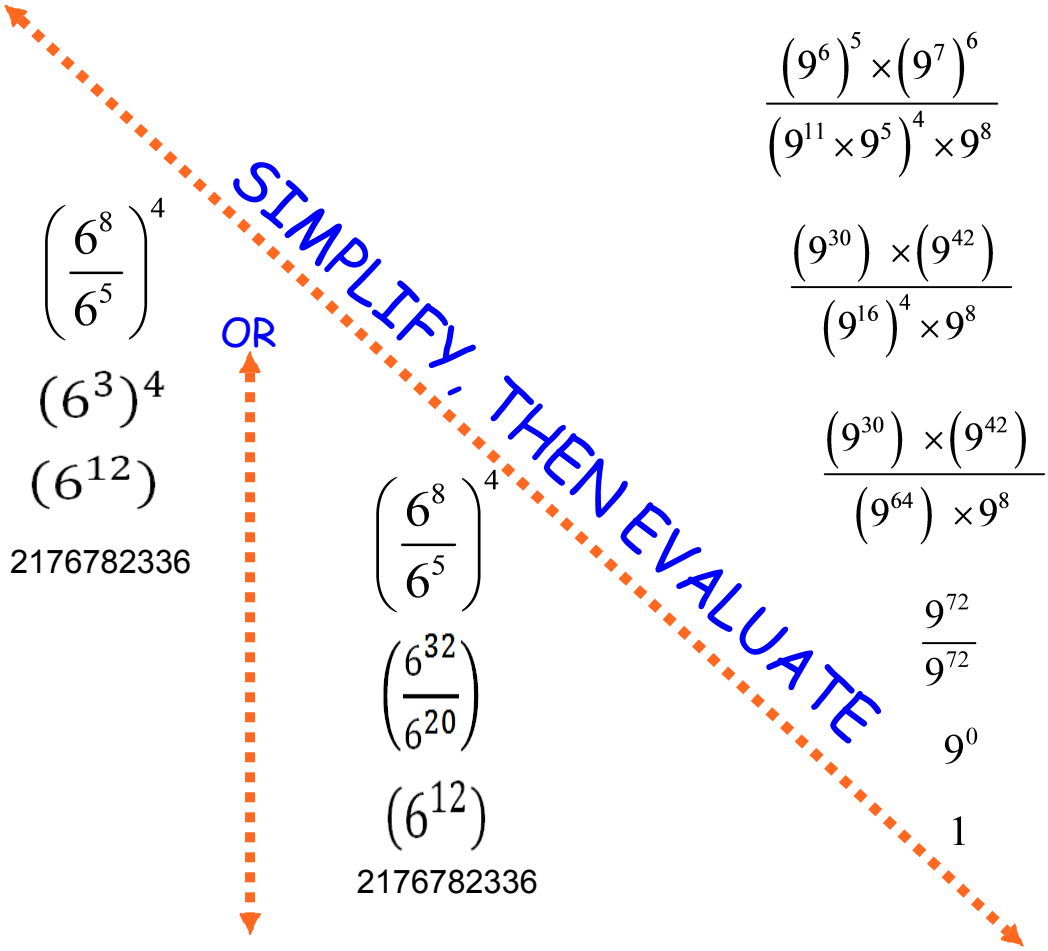
$$\frac{865}{-6076}$$

-0.14

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

SIMPLIFY, THEN EVALUATE

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


SIMPLIFY, THEN EVALUATE
OR
$\left(\frac{6^8}{6^5}\right)^4$
$(6^3)^4$
(6^{12})
2176782336
$\left(\frac{6^8}{6^5}\right)^4$
$\left(\frac{6^{32}}{6^{20}}\right)$
(6^{12})
2176782336
$\frac{(9^6)^5 \times (9^7)^6}{(9^{11} \times 9^5)^4 \times 9^8}$
$\frac{(9^{30}) \times (9^{42})}{(9^{16})^4 \times 9^8}$
$\frac{(9^{30}) \times (9^{42})}{(9^{64}) \times 9^8}$
$\frac{9^{72}}{9^{72}}$
9^0
1

Class/Homework

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Complete the following review questions:

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

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If you finish this there is a simplifying worksheet that you can work on: