Name:_____ Date:_____

Math 9: Section 2.3 Combined Operations with Exponents:

1. Evaluate each of the following expressions (note: order of operation)

a) 2×3^2	b) $5\times(-2)^3$	c) $(-10)\times(7)^2$
d) $5^2\times(-2)^3$	e) $10^3\times(6-4)^3$	f) $\left(2^4-8\times 2\right)^0\times 3^2-1$
g) $\left[4^2-8\right]^2\times 2^2-4^2$	h) $4^2\times 3^3-5^2\times 2^2$	i) $\left(3\times 4^0\right)^2-6\times 3^3\div 27$
j) $(-5-3)^2-(4+4\times 3)^2$	k) $\left[(-3)^3\times(-3)^2\right]-\left[(-2)^5\div(-2)^3\right]^3$	L) $\dfrac{3^3\times(5+1)^2\times 4(-8)^0}{-7^0\times 3^2\times(8-3)^2}$
m) $11^2-\left(5^2-\left(3^1\times 2^3\right)+3\right)^2$	n) $2\left(16^2-121^0\right)-5^3\times(-2)^2$	o) $\dfrac{2^2+(6-3)-4(-10)^1}{-4^2\times(-3)^2-(5-4)^2}$

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2. Given each of the following examples, indicate all the errors:

A	b)	c)
$(-5)\times(2)^3$ $=(-10)^3$ $=1000$	$(2\times5^0)^2-8\times2^4\div32$ $=(10)^2-8(16)\div32$ $=100-8(2)$ $=100-16$ $=84$	$\frac{3^3\times(5+1)^2\times4(-8)^0}{-7^0\times3^2\times(8-3)^2}$ $=\frac{27\times(6^2)\times(-32)^0}{-1\times9\times(8^2-3^2)}$ $=\frac{27\times36\times(1)}{-9\times(55)}$ $=\frac{108}{-55}$

3. Indicate whether if the following statements below are either TRUE or FALSE for all cases. Explain your answer:

a) $a\times b^c=(ab)^c$	b) $a\times(-b)^3=-ab^3$	c) $(a-b)^3=a^3-b^3$
d) $a(-b)^0=(-ab)^0$	e) $(a-b)(a+b)=a^2-b^2$	f) $a^2+b^2=a\times b$

4. John deposited $250 in his bank account earning 5% interest each year. The interest is compounded annually and the value is given by the formula: $A=250(1.05)^t$, where "t" is the number of years. How much will he have in 20years?

5. A $1000 investment is a bank at 8% interest compounded 12 times a year. The amount of money in the investment after 5 years is given by the equation below. Find the total value of the investment after 5 years:

$$A=1000\times\left(1+\frac{0.08}{12}\right)^{12\times5}$$

6. If a, b, and c are distinct positive integers such that $abc=16$ then what is the largest possible value of: $a^b-b^c+c^a$?

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