Name:_____ Date:_____

Homework sheet: Alg2H

PEMDAS : (page 41)

"Please Excuse My Dear Aunt Sally".

Parentheses → Exponents → Multiply/Divide → Add/Subtra

1. Board examples:

① $-5^2 + 3 \cdot 5 = -25 + 15 = \boxed{-10}$

② $5 \cdot (2^3 - 5) + 2 = 5(\underbrace{8-5}_{3}) + 2 = \boxed{17}$

③ $2 \cdot 3^2 + 4 \cdot 5 - (2-7) = 2 \cdot 9 + 20 - (-5) =$

$18 + 20 + 5 = 43$

④ $(3+2)^2 = \boxed{25}$

⑤ $(x+2)^2 = (x+2)(x+2) = \boxed{x^2+4x+4}$

Problems denoted with ** mark are taken from Exeter Phillips Academy (NH) math curriculum.

2. (Book1 19**) Compute each of the following. For some of these, there are two ways to compute the result. Explain.

a. $3(2 + 3 + 5)$

$3 \cdot (10) = \boxed{30}$

b. $\frac{1}{3}(9+6-3)$

$\frac{1}{3}(12) = \boxed{4}$

c. $(9+6-3) \div 3$

$12 \div 3 = \boxed{4}$

d. $3(2 \cdot 3 \cdot 5)$

$3(30) = \boxed{90}$

e. $3 \div (9+6-3)$

$3 \div (12) = \boxed{\frac{1}{4}}$

3. (Book1 8**) Kelly telephoned Brook about a homework problem. Kelly said, "Four plus three times two is 14, isn't it?" Brook replied, "No, it's 10." Did someone make a mistake? Can you explain where these two answers came from?

Kelly:

$(4+3) \cdot 2 = \boxed{14}$

Brook:

$4+3 \cdot 2 = \boxed{10}$

4. Solve (problems are based on www.chilimath.com):

a. $2^4 - 5(10 - 4^2 \div 2) + (30 - 3^3)$

$16 - 5\left(10 - \frac{16}{2}\right) + (30 - 27) =$

$= 16 - 5 \cdot 2 + 3 = \boxed{9}$

b. $(32 - 3^3 \div 9 \times 10)^5 - 4^2 \div 8 + 3^2$

$\left(32 - \frac{27}{9} \times 10\right)^5 - \frac{16}{8} + 9 =$

$= (2)^5 - 2 + 9 = \boxed{39}$

c. $(-3 - 16 \div 2^4 - 1)^2 - 1(-8 \div 4)^3$

$\left(-3 - \frac{16}{16} - 1\right)^2 - 1(-2)^3 =$

$= (-5)^2 - 1(-8) = 25 + 8 = \boxed{33}$

d. $(27 - 27 \div 3^2 - 26)^2 + (-7 \div 7)^3 \times (-1)$

$\left(27 - \frac{27}{9} - 26\right)^2 + (-1)^3 \times (-1) =$

$= (-2)^2 + (-1)(-1) = 4 + 1 = \boxed{5}$