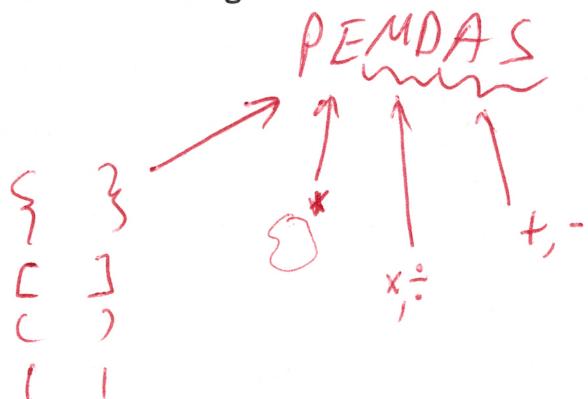


Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Homework sheet: Alg2H

PEMDAS : (page 41)



1. Board examples:

See in class

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

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

$$3 \cdot (10) = \boxed{30} \quad 3 \cdot 2 + 3 \cdot 3 + 3 \cdot 5 = 6 + 9 + 15 = 30$$

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

$$3 \cdot (2 \cdot 3 \cdot 5) = 3 \cdot 30 = \boxed{90}$$

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

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

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:

$$(9+3) \cdot 2 = 14$$

Brook:

$$9 + 3 \cdot 2 = 10$$

4. (Book1 10\*\*) Wes bought some school supplies at an outlet store in Maine, a state that has a 6.5% sales tax. Including the sales tax, how much did Wes pay for two blazers priced at \$49.95 each and 3 pairs of pants priced at \$17.50 each?

$$(2 \times 49.95 + 3 \times 17.5) \times \underbrace{1.065} = 152.9 \times 1.065 = \\ \uparrow \\ \text{adding } 6.5\% \text{ tax} \quad \boxed{= \$162.31}$$

5. (Book1 11\*\*) (Continuation) A familiar feature of arithmetic is that multiplication distributes over addition. Written in algebraic code, this property looks like  $a(b + c) = ab + ac$ . Because of this property, there are two equivalent methods that can be used to compute the answer in the previous problem. Explain (you can use the space above).

Add tax at end (as we did)

Add tax at start to each item

6. Solve (problems are based on [www.chilimath.com](http://www.chilimath.com)):

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

$$\begin{aligned} & 16 - 5\left(10 - \frac{16}{2}\right) + (30 - 27) = \\ & = 16 - 10 + 3 = \boxed{9} \end{aligned}$$

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

$$\begin{aligned} & \left(32 - \frac{27}{9} \times 10\right)^5 - \frac{16}{8} + 9 = \\ & = (2)^5 - 2 + 9 = 32 - 2 + 9 = \boxed{39} \end{aligned}$$

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

$$\begin{aligned} & \left(-3 - \frac{16}{16} - 1\right)^2 - \left(\frac{-8}{4}\right)^3 \\ & = (-5)^2 - (-2)^3 = 25 - (-8) = \boxed{33} \end{aligned}$$

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

$$\begin{aligned} & \left(27 - \frac{27}{9} - 26\right)^2 + \left(\frac{-7}{7}\right)^3 \times (-1) = \\ & = (-2)^2 + (-1)^3 \cdot (-1) = 4 + (-1)(-1) = \boxed{5} \end{aligned}$$