1.2 Order of Operations with Integers

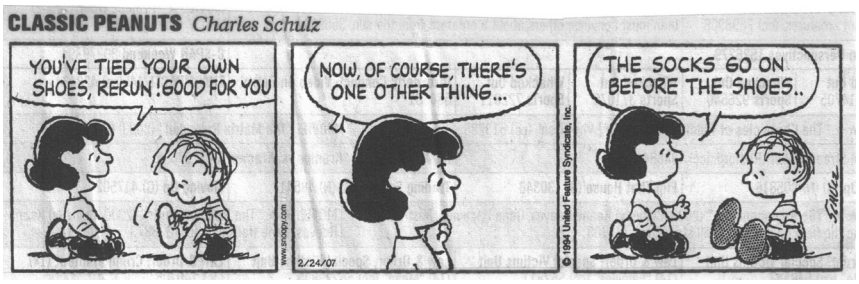
BEDMAS

Brackets

Exponents

Division and Multiplication

Addition & Subtraction



Order Matters

Example 1: Evaluate. *(Means to calculate a numerical answer)*

a) $5 + 2 \times 3$

$= 5 + 6$

$= 11$

b) $(5 + 2) \times 3$

$= 7 \times 3$

$= 21$

B E D M A S

c) $5 + 2 \times 3^2$

$= 5 + 2 \times 9$

$= 5 + 18$

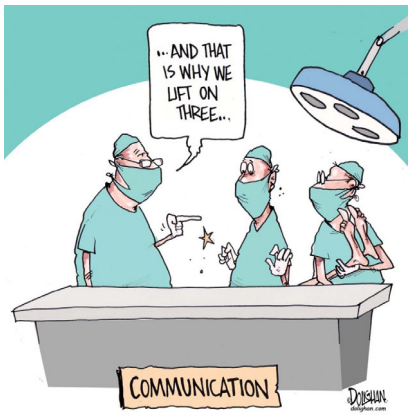
$= 23$

d) $(5 + 2 \times 3)^2$

$= (5 + 6)^2$

$= 11^2$

$= 121$ { 11×11



$= (5+6)^2 = 11^2 = 121$

NO NO No!

Communication:
- align equal signs vertically
- one equal sign per line

Example 2: Evaluate each expression. BEDMAS

a) $5 - 7 \times (-2) + 3 \times 5$

OR $5 - (-14) + \dots$

$= 5 + 14 + 15$

$= 34$

b) $5 - (-6) \div (-6) \cdot (-2)$

DOT means multiplication

$= 5 + 6 \div (-6) \cdot (-2)$

$= 5 - 1 \cdot (-2)$

$= 5 + 2$

$= 7$

$5 - (-2)$

multiplication

c) $4(3 - 7) \times (-1 - (-5))$

$= 4(-4) \cdot (-1 + 5)$

$= 4(-4)(4)$

$= -16(4)$

$= -64$

d) $3 - (7 - 4)^2 \times (-1)$

$= 3 - (3)^2 (-1)$

$= 3 - 9(-1)$

$= 3 + 9$

$= 12$

Example 3: Evaluate each expression.

dot means multiplication

a) $5 + (-12) \div (+4)$

$= 5 + (-3)$

$= 5 - 3$

$= 2$

b) $\dfrac{4 \cdot 6 - (5 + 3)}{(10 \div 2 \cdot 4) \div 5}$

$= \dfrac{24 - 8}{(5 \cdot 4) \div 5}$

$= \dfrac{16}{20 \div 5}$

$= \dfrac{16}{4}$

$= 4$

c) $\dfrac{5 - 15}{-(-2)} - 1$

$= \dfrac{-10}{2} - 1$

$= -5 - 1$

$= -6$

d) $5 + 7[12 - 5(2)]$

$= 5 + 7(12 - 10)$

$= 5 + 7(2)$

$= 5 + 14$

$= 19$

Example 4: Evaluate each of the expressions below. Write the sum of the answers in the box in the middle.

a) $(-7) - (-5) - [4 + (-3)]$

$= -7 + 5 - (4 - 3)$
$= -7 + 5 - 1$
$= -2 - 1$
$= -3$

b) $(-4) \times 2 - 3 \times (2 - 3)$

$= (-4)(2) - 3(-1)$
$= -8 + 3$ OR $= -8 - (-3)$
$= -8 + 3$
$= -5$

6

c) $(-2) \times 8 \div (-4)$

$= -16 \div (-4)$
$= 4$

d) $-2 \times (-5 + (-12) \div 3) - 2^3$

$= -2(-5 + (-4)) - 8$
$= -2(-5 - 4) - 8$
$= -2(-9) - 8$
$= 18 - 8$
$= 10$

ALWAYS, ALWAYS, ALWAYS
SHOW ALL WORK!