

Objectives: I can solve problems using order of operations.

Order of Operations

Jordan solved the problem $5 + 4 \cdot 2$ and got the answer of 18. David solved the same problem and got 13. Can both be correct? Is there only one correct order to perform operations? Who is correct?

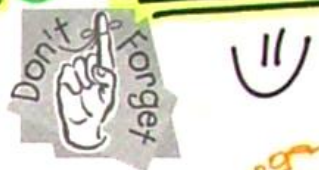
Don't forget the different symbols for multiplication:
 $5 \cdot 2$ $5(2)$ 5×2 $5 \cdot 2$

Add $(5 + 4) \cdot 2$
 Multiply $9 \cdot 2$
 18

Jordan \otimes
 (Sorry! Try again!)

$5 + (4 \cdot 2)$ ← Multiply
 $5 + 8$ ← ADD
 13

David \odot **CORRECT**



like #5

Let's use this acronym to help us remember the order of operations...

① Please ② Excuse ③ My Dear ④ Aunt Sally

P (Level 1) Parentheses / Brackets / Fraction Bar **GROUPS**

E (Level 2) Exponents

M & D (Level 3) Multiply and/or Divide from left to right

A & S (Level 4) Add and/or Subtract from left to right



Practice P E MD AS

Steps must be shown so that each line of work is equal to the line above.

① $5 \cdot 10 - 6 \cdot 2$ M
 $50 - 12$ S
38

② $24 \div 6 \cdot 2$ MD
 $4 \cdot 2$ M
8

③ $3 + 5(7 - 5)$ P
 $3 + 5(2)$ M
 $3 + 10$ A
13

④ $18 - 5 \cdot 3$ M
 $18 - 15$ S
3

⑤ $\frac{9 + 7 \cdot 5}{4}$ PM
 $\frac{9 + 35}{4}$ A
 $\frac{44}{4}$ D **11**

⑥ $2[9(6 - 4)] + 4$ Ps
 $2[9(2)] + 4$ M
 $2(18) + 4$ M
 $36 + 4$ A
40

⑦ $30 - 2^3$ E
 $30 - 8$ S
22

⑧ $3(14 - 8)^2$ Ps
 $3(6)^2$ E
 $3(36)$ M
108

⑨ $10 \cdot 3^4$ E
 $10 \cdot 81$ M
810

2 · 2 · 2

6 · 6

3 · 3 · 3 · 3
 9 · 9