

# Order of Operations

Please excuse my dear aunt Sally (Pemdas)  
↳ Go ?

Go excuse dogs making smelly apples. (gedmsa)

① Grouping symbols ( ) [ ]  $|a-b|$   
 $\frac{a-b}{b+a}$  → fraction bar      ↳ absolute value

② Exponents  $4^2$  (4 squared) =  $4 \cdot 4 = 16$   
 $5^3$  (5 cubed) =  $5 \cdot 5 \cdot 5 = 125$

③ Dividing and Multiplying  
from Left to Right →

④ Subtracting and Adding  
from Left to Right →

## Examples

1)  $12 + 5(2)$   
 $12 + 10$   
 $\boxed{22}$

2)  $8 \cdot 2^3$   
 $8 \cdot 8$   
 $\boxed{64}$

3)  $5 + 4(3) - \frac{8}{2}$   
 $5 + 12 - 4$   
 $17 - 4$   
 $\boxed{13}$

4)  $-18 + 6 \cdot 9$   
 $-18 + 54$   
 $\boxed{36}$

$$\begin{aligned} 5) \quad & 30 - 4 \div 2 \\ & 30 - 2 \\ & \boxed{28} \end{aligned}$$

$$\begin{aligned} 6) \quad & 2 \cdot 6^2 + 5 \\ & 2 \cdot 36 + 5 \\ & 72 + 5 \\ & \boxed{77} \end{aligned}$$

$$\begin{aligned} 7) \quad & (6 \cdot 2)^2 \\ & 12^2 \\ & \boxed{144} \end{aligned}$$

$$\begin{aligned} 8) \quad & [7 + 3 \cdot 2 + 8] \div 7 \\ & [7 + 6 + 8] \div 7 \\ & 21 \div 7 \\ & \boxed{3} \end{aligned}$$

$$\begin{aligned} 9) \quad & 3 [8 - 3 \cdot 2 + 4 (5 - 2)] \\ & 3 [8 - 6 + 4(3)] \\ & 3 [8 - 6 + 12] \\ & 3 [2 + 12] \\ & 3 [14] \\ & \boxed{42} \end{aligned}$$

$$10) \quad \frac{8 + 15}{23} = \frac{23}{23} = \boxed{1}$$

$$11) \quad \frac{8 + 2}{5 - 1} = \frac{10}{4} = \boxed{\frac{5}{2}}$$

$$\begin{aligned} 12) \quad & \text{Evaluate } abc \\ & \text{for } a = 3 \\ & \quad b = 4 \\ & \quad c = 2 \\ & (3)(4)(2) = \boxed{24} \end{aligned}$$

$$\begin{aligned} 13) \quad & \text{Evaluate } ab - 6 \text{ for } a = 12 \quad b = 3 \\ & (12)(3) - 6 \\ & 36 - 6 \\ & \boxed{30} \end{aligned}$$