



Order of Operations

The rules for order of operations are:

1. do operations within **P**arentheses (Grouping symbols)
2. next do operations involving **E**xponents
3. then **M**ultiply/**D**ivide, from left to right
4. and finally **A**dd/**S**ubtract, from left to right.

Examples:

$$4 + 3 \times 2 = 9[2(5) - 3] =$$

$$4 + 6 = 9[10 - 3] =$$

$$10 \quad 9[7] =$$

$$63$$

Identify which operation you should do first to simplify each expression.

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|---------------------------|---------------------|-----------------------------|
| 1. $4 + 5 \cdot 6$ | 2. $45 - 36 \div 3$ | 3. $12 \div (2 + 1)^2$ |
| 4. $5 \cdot (15 - 6 + 2)$ | 5. $50 - 6^2 + 1$ | 6. $70 - 8 \cdot 12 \div 4$ |

Simplify the expressions.

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|-------------------------------|-----------------------------------|--|
| 1. $25 - 10 + 3 - 2$ | 2. $7 \times (9 - 3)$ | 3. $(6 + 14)3$ |
| 4. $2(5^2) \div (14 - 9)$ | 5. $(12 + 18) \div (19 - 4)$ | 6. $5(12 + 9)$ |
| 7. $[48 - 4 \times 3] \div 3$ | 8. $[3 + (4 \times 5)] \times 10$ | 9. $7 + 5^2(4 + 4)$ |
| 10. $100 - (6 + 3)^2$ | 11. $\frac{9 + 4 \times 3}{7}$ | 12. $\frac{2(3)(2 + 5)}{14 \div 2}$ |
| 13. $44 + 17 - 5 \times 2$ | 14. $54 \div 6 + 18 \times 2$ | 15. $\frac{4^2 - (3^2 - 2^3)}{10^2 \div 5 \div 4}$ |