

Order of Operations (pages 8–10)

When you evaluate an expression, the **order of operations** ensures that the expression always has only one value. The order of operations tells you which operation to use first.

Order of Operations	<ol style="list-style-type: none"> 1. Do all operations within grouping symbols first. 2. Multiply and divide in order from left to right. 3. Add and subtract in order from left to right.
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EXAMPLES

Evaluate each expression.

A $15 + 6 \div 3$

$$15 + 6 \div 3 = 15 + 2 \quad \text{First divide 6 by 3.}$$

$$= 17 \quad \text{Second, add 15 and 2.}$$

B $(15 + 6) \div 3$

$$(15 + 6) \div 3 = 21 \div 3 \quad \text{First add 15 and 6}$$

$$= 7 \quad \text{within the parentheses.}$$

$$\quad \text{Second, divide 21 by 3.}$$

Try These Together

Evaluate each expression.

1. $7 \times 4 + 12$

HINT: Multiply first.

2. $(11 - 4) \times 9$

HINT: Do operations in parentheses first.

PRACTICE

Name the operation that should be done first in each expression.

3. $2 \times 8 + 5$

4. $9 - 2 \times 4$

5. $22 \div (2 + 9)$

6. $(4 - 2) \times 5$

Evaluate each expression

7. $4 \div 2 \times 3$

8. $(10 + 12) \div 11$

9. $(15 - 8) \times 3$

10. $36 \times (9 - 9)$

11. $12 - 4 \div 2$

12. $54 \div 6 + 18$

13. $24 \div (3 \times 4)$

14. $7 - (2 \times 3)$

Insert parentheses to make each sentence true.

15. $12 + 3 - 1 \times 2 = 16$

16. $1 + 8 + 4 \div 2 = 7$

17. $16 - 12 \times 3 + 8 = 20$

18. $7 + 3 \times 8 + 1 = 90$

19. **Shopping** Sonny bought 2 comic books that cost \$3 each, 5 comic books that cost \$2 each and 1 comic book that cost \$4. How much did he spend?



20. **Standardized Test Practice** Carlotta scored a 25 on her math test. Her friend scored twice as many points as she did. When Carlotta retook the test, she scored 4 points less than her friend did the first time. Which expression could you use to find Carlotta's score on her second test?

A $25 - 4 \div 2$

B $(4 \times 25) \div 2$

C $(25 \times 2) - 4$

D $25 - 4 \times 2$

Answers: 1. 40 2. 63 3. multiplication 4. multiplication 5. addition 6. subtraction 7. 6 8. 2 9. 21 10. 0 11. 10 12. 27 13. 2 14. 1 15. 12 + (3 - 1) × 2 = 16 16. 1 + (8 + 4) ÷ 2 = 7 17. (16 - 12) × 3 + 8 = 20 18. (7 + 3) × (8 + 1) = 90 19. \$20 20. C