



NAME: \_\_\_\_\_

- To evaluate expressions involving more than one operation, use a set of rules called **order of operations**.

### Order of Operations

STEP 1: Evaluate expressions inside grouping symbols.

STEP 2: Multiply and Divide from left to right.

STEP 3: Add and Subtract from left to right.

- **Grouping Symbols**: Parentheses ( ) and Brackets [ ] are common grouping symbols. Grouping symbols indicate operations that should be performed first.

Example: Compare the expressions  $3 \times 2 + 5$  and  $3 \times (2 + 5)$ .  
To evaluate  $3 \times 2 + 5$ , you multiply first then add.  
To evaluate  $3 \times (2 + 5)$ , you add first, then multiply.

#### SOLVED EXAMPLES:

EXAMPLE 1	EXAMPLE 2
<p><b>Evaluate each expression.</b></p> <p>1) <math>28 - 63 \div 7 = 28 - 9</math> <math>= 19.</math></p> <p>2) <math>9 \times 2 + 27 \div 3 = 18 + 27 \div 3</math> <math>= 18 + 9</math> <math>= 27.</math></p> <p>3) <math>52 + 12.5 \times 4 = 52 + 50</math> <math>= 102.</math></p>	<p><b>Evaluate each expression.</b></p> <p>1) <math>10 \times (1.5 + 0.6) = 10 \times 2.1</math> <math>= 21</math></p> <p>2) <math>72 \div [(11 - 7) \times 2] = 72 \div [4 \times 2]</math> <math>= 72 \div 8</math> <math>= 9</math></p>

**EXERCISES:****Evaluate each expression.**

1) $47.7 - 12 \times 3$	2) $11 \times 7 - 9 \times 5$
3) $14 \div 7 + 36 \div 4$	4) $7 \times [2.5 + 3 \times (12 - 7)]$
5) $84 \div [(18 - 16) \times 3]$	6) $\frac{1}{4} \times \left(\frac{3}{9} + 5\right)$
7) $\frac{9}{10} - \frac{3}{5} \times \frac{1}{2}$	8) $\frac{4}{5} + \left(\frac{1}{2} - \frac{3}{7}\right) \times 2$
9) $15 \times \frac{3}{10} + \frac{7}{8}$	10) $3 + (5 + 9) \div 2 \times 5$

**HOMEWORK:****Evaluate each expression.**

1) $35 + 17 \times 4 - 96 \div 8$	2) $12 + 3 \times (15 \div 3) + 21 \div 7$
3) $135 \div 5 + 17 \times 5$	4) $35.5 \times 2 - 77 \div 7$
5) $12 + 15 - 2 \times [15 - 2 \times (17 - 12)]$	6) $\frac{1}{4} + \frac{2}{3} \times \frac{3}{4}$
7) $126 \div 8 + 3 \times (15 - 5 \times 2)$	8) $3.6 \times 5 - 72 \div 4$
9) $\frac{5}{7} \div \frac{2}{3} - \frac{3}{14}$	10) $27 \div [13 + 5 \times 4 - 2 \times (20 - 8)]$