

# Self-Study Workbook

20 Core Problems · Multiple Choice · Answer Key Included

## PART 1 — PRE-ALGEBRA

### Numbers, Variables & Equations

Order of operations · Integers · Fractions · Equations · Ratios · Percent · Exponents

#### Q01 Order of Operations

**Evaluate:  $3 + 4 \times 2 - 1$** 

Multiplication comes before addition!

**KEY:** PEMDAS: Parentheses → Exponents → Multiply/Divide → Add/Subtract

- A) 13  
C) 15
- B) 10 ✓  
D) 7

**ANSWER: B) 10** Explanation: Step 1:  $4 \times 2 = 8$  (multiply first) Step 2:  $3 + 8 - 1 = 10$ 

#### Q02 Integers / Negative Numbers

**What is  $-3 \times (-4) + (-5)$  ?****KEY:** SIGN RULES: same signs → + | different signs → -

- A) -17  
C) 7 ✓
- B) 17  
D) -7

**ANSWER: C) 7** Explanation: Step 1:  $-3 \times (-4) = +12$  (same signs) Step 2:  $12 + (-5) = 7$ 

#### Q03 Fractions — Adding

**Simplify:  $2/3 + 3/4$** **KEY:** LCD (Least Common Denominator): convert both fractions before adding

- A) 17/12 ✓  
C) 5/12
- B) 5/7  
D) 6/12

**ANSWER: A) 17/12** Explanation: LCD = 12 →  $2/3 = 8/12$ ,  $3/4 = 9/12$  →  $8/12 + 9/12 = 17/12$







