

MATH MASTERY WORKSHEET

Pre-Algebra & Geometry · 20 Questions · Multiple Choice · Answer Key on Last Page

Name: _____ Date: _____ Score: _____ / 20

PART A — PRE-ALGEBRA

Q01. [Order of Operations]

Evaluate: $3 + 4 \times 2^2 - (8 / 4)$

Key: PEMDAS — Parentheses > Exponents > Multiply/Divide > Add/Subtract (left to right). Never add before you multiply!

- A) 12
B) 14
C) 17
D) 19

Q02. [Solving Equations]

Solve for x: $2x + 5 = 17$

Key: UNDO — Do the OPPOSITE operation in REVERSE order. Subtract 5 first, then divide by 2.

- A) x = 4
B) x = 5
C) x = 6
D) x = 11

Q03. [Ratios & Proportions]

A map scale is 1 inch = 25 miles. Two cities are 3.5 inches apart on the map. What is the actual distance?

Key: CROSS-MULTIPLY — Set up $a/b = c/d$. Then multiply diagonals: $1/25 = 3.5/x \rightarrow x = 3.5 \times 25$

- A) 75 miles
B) 87.5 miles
C) 28.5 miles
D) 100 miles

Q04. [Integers]

Calculate: $(-3) \times (-4) + (-6)$

Key: SAME=PLUS / DIFF=MINUS — $(-) \times (-) = (+)$. So $(-3) \times (-4) = +12$. Then $12 + (-6) = 6$.

- A) -18
B) -6
C) 6
D) 18

Q05. [Percentages]

A shirt costs \$40. It is 25% off. What is the sale price?

Key: MULTIPLY BY $(1 - \text{rate})$ — 25% off means you pay 75%. $\$40 \times 0.75 = \30 . Faster than finding discount separately!

- A) \$10
B) \$25
C) \$30
D) \$35

Q06. [Combining Like Terms]

Simplify: $5x + 3y - 2x + 7y - x$

Key: MATCH LETTERS — Combine only identical variables: $(5x-2x-x) + (3y+7y) = 2x + 10y$

- A) $4x + 10y$
B) $3x + 10y$
C) $2x + 10y$
D) $12xy$

Q07. [Inequalities]

Solve: $-3x > 12$ [CAUTION: Watch what happens to the sign!]

Key: FLIP SIGN — Divide both sides by -3. Dividing/multiplying by a NEGATIVE number FLIPS the inequality! $x < -4$.

- A) $x > -4$
B) $x < -4$
C) $x > 4$
D) $x < 4$

Q08. [Exponents]

