

MATH PRACTICE WORKSHEET

Algebra 1 & Geometry 1 — Core Problems

ALGEBRA 1 — Linear Equations & Expressions

A-01 Solving Linear Equations

Solve for x : $3x + 7 = 22$

■ **MEMORY: MOVE & DIVIDE** — subtract numbers first, then divide

Answer: _____

A-02 Two-Step Equations / Tricky Negative

Solve for x : $5x - 3 = 2x + 12$

■ **MEMORY: COLLECT** — move all x to one side, numbers to the other

Answer: _____

A-03 Distributive Property

Solve for x : $2(x + 4) = 18$

■ **MEMORY: DISTRIBUTE FIRST** — expand the parentheses before solving

Answer: _____

A-04 Slope of a Line

Find the slope of the line through $(2, 3)$ and $(6, 11)$.

■ **MEMORY: RISE over RUN** — slope = $(y_2 - y_1) / (x_2 - x_1)$

Answer: _____

A-05 y -intercept from Slope-Intercept Form

What is the y -intercept of the line $y = 4x - 7$?

■ **MEMORY: $y = mx + b$ → b IS the y -intercept**

Answer: _____

A-06 Systems of Equations — Substitution

Solve for x : $y = 2x$ and $x + y = 9$

■ **MEMORY: PLUG IN** — substitute the first equation into the second

Answer: _____

A-07 Exponent Rules

Simplify: $x^3 * x^4$ — what is the exponent of x ?

■ **MEMORY: SAME BASE ADD exponents** ($x^a * x^b = x^{(a+b)}$)

Answer: _____

A-08 Factoring — Difference of Squares

Factor $x^2 - 25$. What is the positive root?

■ **MEMORY:** $A^2 - B^2 = (A+B)(A-B) \rightarrow$ roots are +B and -B

Answer: _____

A-09 Inequalities — Sign Flip

Solve: $-2x > 8$. What is the boundary number?

■ **MEMORY:** **FLIP** the sign when **DIVIDING** by a **NEGATIVE**

Answer: _____

A-10 Quadratic — Vertex x-coordinate

For $y = x^2 - 6x + 8$, find the x-coordinate of the vertex.

■ **MEMORY:** vertex $x = -b / 2a$ (for $y = ax^2 + bx + c$)

Answer: _____

GEOMETRY 1 — Angles, Triangles & Circles

G-01 Supplementary Angles

Two supplementary angles: one is 65 degrees. Find the other.

■ **MEMORY:** **SUPPLEMENTARY = 180** (straight line)

Answer: _____

G-02 Triangle Angle Sum

A triangle has angles 55 degrees and 80 degrees. Find the third.

■ **MEMORY:** **TRIANGLE SUM = 180** always

Answer: _____

G-03 Pythagorean Theorem

Right triangle: legs = 3 and 4. Find the hypotenuse.

■ **MEMORY:** $a^2 + b^2 = c^2 \rightarrow$ memorize 3-4-5 triangle

Answer: _____

G-04 Area of Triangle

Triangle: base = 10, height = 6. Find the area.

■ **MEMORY:** **HALF** base times height — Area = $(1/2) \times b \times h$

Answer: _____

G-05 Vertical Angles

Two lines intersect. One angle = 72 degrees. Find the vertical angle.

■ **MEMORY:** **VERTICAL = EQUAL** — opposite angles are always equal

Answer: _____

G-06 Circle — Circumference ($\pi=3.14$)

Circle with diameter = 10. Find circumference (round to whole number).

■ **MEMORY: $C = \pi \times d$ or $2 \times \pi \times r$**

Answer: _____

G-07 Exterior Angle Theorem

Exterior angle = 120 deg. One interior angle = 70 deg. Find x.

■ **MEMORY: EXTERIOR = SUM of the 2 non-adjacent interior angles**

Answer: _____

G-08 Area of Circle ($\pi=3.14$)

Circle with radius = 7. Find area (round to whole number).

■ **MEMORY: Area = $\pi \times r^2$ (r squared, NOT diameter!)**

Answer: _____

G-09 Parallel Lines — Alternate Interior Angles

Parallel lines cut by transversal. One alt. interior angle = 58 deg.

■ **MEMORY: ALTERNATE INTERIOR = EQUAL (Z-shape between parallel lines)**

Answer: _____

G-10 Similar Triangles — Scale Factor

Similar triangles, ratio 1:3. Small side = 4. Find the large side.

■ **MEMORY: SIMILAR = PROPORTIONAL — multiply by the scale factor**

Answer: _____

ANSWER KEY

A-01 5	A-02 5	A-03 5	A-04 2
A-05 -7	A-06 3	A-07 7	A-08 5
A-09 -4	A-10 3	G-01 115	G-02 45
G-03 5	G-04 30	G-05 72	G-06 31
G-07 50	G-08 154	G-09 58	G-10 12