Math Mastery Worksheet

Algebra 1 & Geometry — Word Problems | 20 Questions | Multiple Choice

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Part I — Algebra 1 Word Problems

Q1–10

QUICK RECALL	VARIABLE = unknown	EQUATION = balance	ISOLATE x	DISTRIBUTE first	FLIP ineq. ÷ by negative

Q1 · EASY

Maya has 3 times as many stickers as her brother Leo. Together they have 48 stickers. How many stickers does Leo have?

> *Setup: Let Leo = x, Maya = 3x. x + 3x = 48 → 4x = 48 → x = 12.*

A. 12

C. 36

B. 16

D. 24

Q2 · MEDIUM

A school bus picks up students at two stops. At Stop A it picks up n students, and at Stop B it picks up 8 fewer than twice the number at Stop A. Total is 40. Find n.

> *Setup: Stop A = n, Stop B = 2n-8. n + (2n-8) = 40 → 3n = 48 → n = 16.*

A. 10

C. 16

B. 14

D. 20

Q3 · TRICKY

Lena saves $12 per week and already has $40 saved. After how many weeks will she have at least $100? (Inequality!)

> *Setup: 40 + 12w >= 100 → 12w >= 60 → w >= 5.*

A. 4 weeks

C. 6 weeks

B. 5 weeks

D. 7 weeks

Q4 · HARD

Two friends run toward each other on a 600-meter track. Alex runs at 4 m/s and Jordan at 6 m/s. How many seconds until they meet?

> *Setup: Combined rate = 4+6 = 10 m/s. Time = 600 / 10 = 60 s.*

A. 50 s

B. 60 s

C. 75 s

D. 100 s

Q5 · MEDIUM

The sum of three consecutive even integers is 78. What is the largest of the three?

> *Setup: $n + (n+2) + (n+4) = 78 \rightarrow 3n+6=78 \rightarrow n=24$. Largest = 28.*

A. 24

B. 26

C. 28

D. 30

Q6 · TRICKY

A store sells T-shirts for $15 and hats for $10. Carlos spent exactly $95 on 7 items total. How many T-shirts did he buy?

> *Setup: $t+h=7$, $15t+10h=95$. Substitution: $5t+70=95 \rightarrow t=5$.*

A. 2

B. 3

C. 4

D. 5

Q7 · EASY

A recipe calls for 2 cups of flour for every 3 cups of milk. If you use 9 cups of milk, how many cups of flour do you need?

> *Setup: $2/3 = x/9 \rightarrow 3x=18 \rightarrow x=6$.*

A. 4

B. 5

C. 6

D. 7

Q8 · HARD

A number is 5 more than twice another number. Their sum is 26. What is the larger number?

> *Setup: $y=2x+5$, $x+y=26$. $\rightarrow 3x+5=26 \rightarrow x=7$, $y=19$.*

A. 14

B. 16

C. 18

D. 19

Q9 · MEDIUM

Car rental A: $30/day + $20 fee. Rental B: $25/day + $45 fee. After how many days are costs equal?

> *Setup: 30d+20 = 25d+45 → 5d=25 → d=5.*

A. 3

C. 5

B. 4

D. 6

Q10 · TRICKY

The perimeter of a rectangle is 54 cm. Its length is 3 more than twice its width. What is the width?

> *Setup: 2(l+w)=54 → l+w=27. l=2w+3. → 3w+3=27 → w=8.*

A. 6 cm

C. 8 cm

B. 7 cm

D. 9 cm

Part II — Geometry Word Problems

Q11–20

QUICK RECALL	PERIMETER = add sides	AREA = inside surface	$a^2+b^2=c^2$	PARALLEL → equal ∠	TRIANGLE = 180°

Q11 · EASY

A rectangular garden is 12 m long and 7 m wide. How many meters of fencing do you need to surround it?

> *Setup: P = 2(12+7) = 2(19) = 38 m.*

A. 19 m

C. 84 m

B. 38 m

D. 42 m

Q12 · MEDIUM

A circular pool has a radius of 5 m. What is the area of the pool? (pi = 3.14)

> *Setup: A = pi*r^2 = 3.14 * 25 = 78.5 m^2.*

A. 15.7 m^2

C. 78.5 m^2

B. 31.4 m^2

D. 314 m^2

Q13 · HARD

A right triangle has legs of 6 cm and 8 cm. What is the length of the hypotenuse?

> *Setup: 6^2 + 8^2 = c^2 → 36+64=100 → c=10 cm.*

A. 7 cm

B. 9 cm

C. 10 cm

D. 14 cm

Q14 · TRICKY

Two parallel lines are cut by a transversal. One angle is 65 degrees. What is the co-interior (same-side interior) angle?

> *Setup: Co-interior angles are supplementary: 180 - 65 = 115 degrees.*

A. 65°

B. 115°

C. 90°

D. 25°

Q15 · MEDIUM

A triangle has angles in the ratio 2:3:7. What is the largest angle?

> *Setup: Total parts=12. One part=180/12=15°. Largest = 7*15 = 105°.*

A. 70°

B. 90°

C. 105°

D. 120°

Q16 · EASY

A square tile has sides of 9 cm. What is the area?

> *Setup: Area = 9^2 = 81 cm^2.*

A. 18 cm^2

B. 36 cm^2

C. 81 cm^2

D. 72 cm^2

Q17 · HARD

A ladder 13 m long leans against a wall with the base 5 m from the wall. How high up the wall does the ladder reach?

> *Setup: h^2 + 5^2 = 13^2 → h^2=144 → h=12 m.*

A. 8 m

B. 10 m

C. 12 m

D. 14 m

Q18 · MEDIUM

A triangle and a rectangle share base 10 cm. Triangle height=8 cm, rectangle height=4 cm. Which has the greater area, and by how much?

> *Setup: Triangle: 1/2*10*8=40. Rectangle: 10*4=40. They are equal.*

A. Triangle by 10 cm^2

B. Rectangle by 10 cm^2

C. They are equal

D. Rectangle by 20 cm^2

Q19 · TRICKY

An exterior angle of a triangle measures 110 degrees. The two non-adjacent interior angles are equal. What is each?

> *Setup: Exterior angle = sum of non-adjacent interior: 2x=110 → x=55°.*

A. 35°

B. 55°

C. 70°

D. 110°

Q20 · HARD

A cylinder has radius 3 m and height 5 m. What is the volume? (pi = 3.14)

> *Setup: V = pi*r^2*h = 3.14*9*5 = 141.3 m^3.*

A. 47.1 m^3

B. 94.2 m^3

C. 141.3 m^3

D. 282.6 m^3

ANSWER KEY

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
A	**C**	**B**	**B**	**C**	**D**	**C**	**D**	**C**	**C**	**B**	**C**	**C**	**B**	**C**	**C**	**C**	**C**	**B**	**C**