

Algebra 1 - Literal Equations and Formulas - Test Answer Key

Common Core A-CED.A.4, A-REI.A.1 · maths-pdf.fr/en/

Grade the literal equations test with this key. Every question lists the points available and how to split them between method and result. Students who show clear work should receive partial credit, even if the final answer is not correct. The test totals 20 points in all.

Algebra 1 · Common Core State Standards: **A-CED.A.4, A-REI.A.1**

Question 1 - Solve for a side [2 pts]

a) Divide by lh : $w = \frac{V}{lh}$.

b) Subtract b , then divide by x : $m = \frac{y-b}{x}$.

Scoring: 1 point for each correct formula.

Question 2 - Standard form [2 pts]

Subtract $4x$: $5y = 20 - 4x$. Divide by 5: $y = 4 - \frac{4}{5}x$.

$$y = 4 - \frac{4}{5}x$$

Scoring: 1 point for isolating the y term; 1 point for dividing every term by 5.

Question 3 - Trapezoid height [2 pts]

Multiply by 2: $2A = h(a+b)$. Divide by $a+b$.

$$h = \frac{2A}{a+b}$$

Scoring: 1 point for clearing the fraction; 1 point for dividing by the whole sum.

Question 4 - Variable on both sides [2 pts]

Subtract bx and add 3: $ax - bx = 10$. Factor: $x(a-b) = 10$.

$$x = \frac{10}{a-b}$$

Scoring: 1 point for collecting x terms; 1 point for factoring and dividing.

Question 5 - Find the principal [2 pts]

Divide both sides by rt : $P = \frac{I}{rt}$.

Substitute: $P = \frac{225}{0.05(3)} = \frac{225}{0.15} = 1500$.

$P = \frac{I}{rt}$; **\$1,500**

Scoring: 1 point for the formula; 1 point for \$1,500.

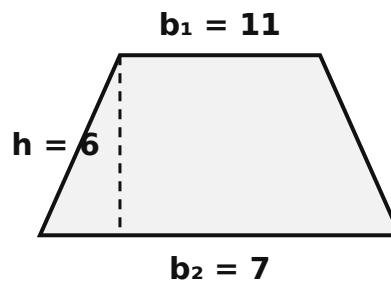
Question 6 - Interest rate [2 pts]

$r = \frac{I}{Pt} = \frac{270}{1500(3)} = \frac{270}{4500} = 0.06$.

$r = \frac{I}{Pt}$; **6%**

Scoring: 1 point for the rearranged formula; 1 point for 6%.

Question 7 - Trapezoid base [3 pts]



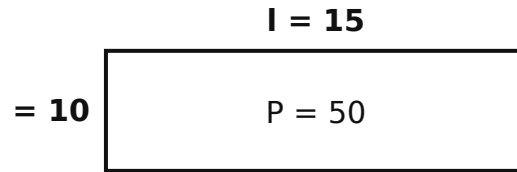
Top base 11 feet.

a) $b_1 = \frac{2A}{h} - b_2$.

b) $b_1 = \frac{2(54)}{6} - 7 = 18 - 7 = 11$.

11 feet

Scoring: part a, 1 point for clearing the fraction and 1 point for isolating b_1 ; part b, 1 point.

Question 8 - Rectangle width [3 pts]

Width 10 meters.

a) $w = \frac{P-2l}{2}$.

b) $w = \frac{50-30}{2} = 10$ m.

c) $A = lw = 15 \cdot 10 = 150$ m².

10 m; 150 m²

Scoring: 1 point per part.

Question 9 - Find the error [2 pts]

After subtracting $3x$ the equation is $2y = 12 - 3x$. The student forgot to divide every term, including 12 and $3x$, by 2.

$$y = 6 - \frac{3}{2}x$$

Scoring: 1 point for the explanation; 1 point for the correct equation.

Total
20 points