

Algebra 1 · Linear Equations and Literal Equations · Quiz

Common Core A-REI.A.1, A-REI.B.3, A-CED.A.1, A-CED.A.4 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

Answer these 10 multiple-choice questions on linear equations and literal equations. Each question has exactly one correct answer. Work the problem on paper first, then choose, and read the explanation for any miss.

Algebra 1 Common Core: **A-REI.A.1 · A-REI.B.3 · A-CED.A.1 · A-CED.A.4**

Questions

Question 1

What is the solution of $3x - 7 = 2x + 5$?

- A. $x = -2$
- B. $x = 2$
- C. $x = -12$
- D. $x = 12$

Question 2

Which property justifies the step from line 1 to line 2?

$$3(x + 2) = 15$$

→ Given

$$3x + 6 = 15$$

→ ???

What justifies the move from line 1 to line 2?

- A. Associative property of addition
- B. Subtraction property of equality
- C. Distributive property
- D. Commutative property of multiplication

Question 3

What is the solution of $\frac{2}{3}x - 1 = 5$?

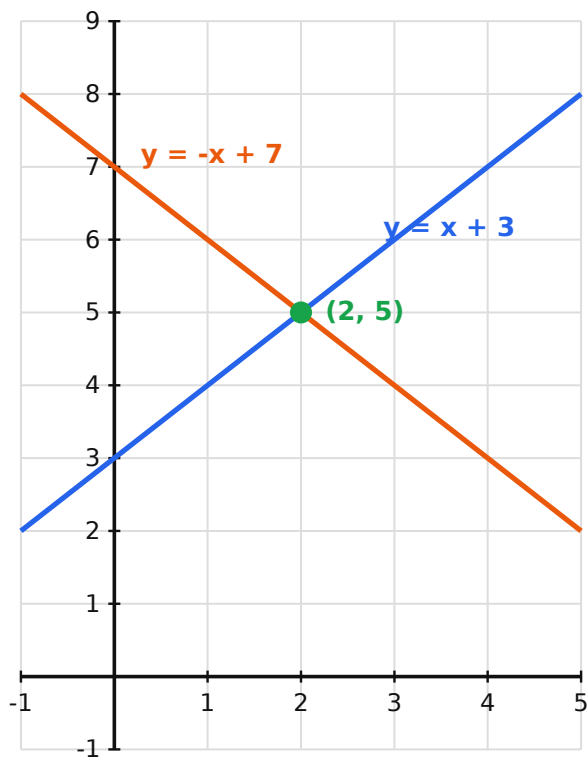
- A. $x = 9$
- B. $x = 4$

C. $x=6$

D. $x=3$

Question 4

The graph shows $y = x+3$ and $y = -x+7$. What is the solution of $x+3 = -x+7$?



Graphs of $y = x+3$ and $y = -x+7$.

A. $x=5$

B. $x=2$

C. $x=3$

D. $x=7$

Question 5

How many solutions does $2(x+4) = 2x+9$ have?

A. All real numbers

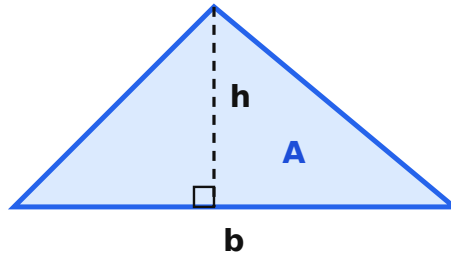
B. Exactly one solution

C. No solution

D. Exactly two solutions

Question 6

Solve $A = \frac{1}{2}bh$ for b .



A triangle with base b , height h and area A .

- A. $b = \frac{A}{2h}$
- B. $b = \frac{Ah}{2}$
- C. $b = 2Ah$
- D. $b = \frac{2A}{h}$

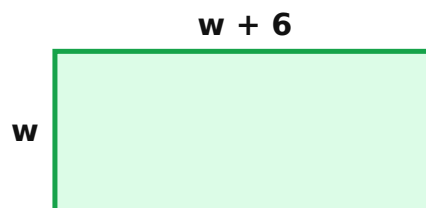
Question 7

Which equation solves $C = \frac{5}{9}(F - 32)$ for F ?

- A. $F = \frac{9}{5}C - 32$
- B. $F = \frac{5}{9}C + 32$
- C. $F = \frac{9}{5}(C + 32)$
- D. $F = \frac{9}{5}C + 32$

Question 8

A rectangle has width w feet and length $w + 6$ feet. Its perimeter is 44 feet. What is the width?



The rectangle.

- A. 8 feet
- B. 14 feet
- C. 19 feet
- D. 11 feet

Question 9

Mei spent \$14 on lunch, then spent half of her remaining money on a book. She has \$12 left. How much did she start with?

- A. \$26
- B. \$38
- C. \$19
- D. \$52

Question 10

What is the solution of $0.5x+3=0.2x+9.3$?

- A. $x=-21$
- B. $x=21$
- C. $x=41$
- D. $x=12.6$

Answer key

1. **D** - Subtract $2x$ and add 7: $x=12$. Subtracting 7 instead of adding gives -2 .
2. **C** - Line 2 multiplies 3 by both terms inside the parentheses, which is the distributive property.
3. **A** - Add 1 to get $\frac{2}{3}x=6$, then multiply by $\frac{3}{2}$: $x=9$. Multiplying by $\frac{2}{3}$ gives 4.
4. **B** - The solution is the x-coordinate of the intersection point (2,5). The value 5 is the y-coordinate.
5. **C** - Distributing gives $2x+8=2x+9$, so $8=9$, which is false for every x .
6. **D** - Multiply by 2 to get $2A=bh$, then divide by h . Dividing by 2 instead of multiplying gives $\frac{A}{2h}$.
7. **D** - Multiply by $\frac{9}{5}$ to get $\frac{9}{5}C=F-32$, then add 32.
8. **A** - Solve $2(2w+6)=44$ to get $w=8$. The length is 14 ft. Forgetting the factor 2 gives 19.
9. **B** - Solve $\frac{m-14}{2}=12$: $m-14=24$, so $m=38$. Subtracting 14 instead of adding gives 26.
10. **B** - Subtract $0.2x$ and 3: $0.3x=6.3$, so $x=21$. Dividing 6.3 by 0.5 gives 12.6.

Remember:

- Standards A-REI.A.1, A-REI.B.3, A-CED.A.1 and A-CED.A.4 cover justified solving, multi-step equations, writing equations and rearranging formulas.
- Every step must be backed by a property: equality properties, the distributive property, or combining like terms.
- Multiply by the least common denominator to clear fractions before solving.
- If the variable cancels, a false statement means no solution and a true statement means infinitely many solutions.
- To solve a formula for one letter, treat the other letters as numbers: for $A = (1/2)bh$, $h = 2A/b$.