

Grade 8 · Systems of Linear Equations · Quiz

Common Core 8.EE.C.8a, 8.EE.C.8b, 8.EE.C.8c · mathovore.fr

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

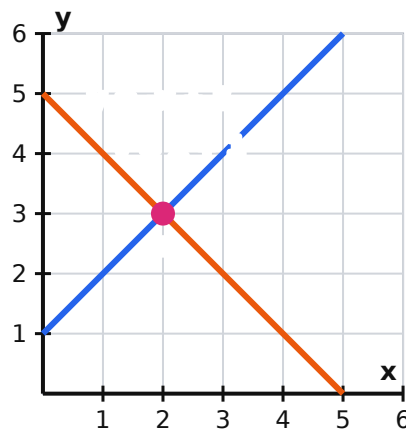
Ten multiple-choice questions check your skill with systems of linear equations: reading intersections, testing ordered pairs, substitution, elimination, no-solution systems and word problems. Choose the one correct answer, then read the explanation to learn from any mistake.

Grade 8 Common Core: 8.EE.C.8a · 8.EE.C.8b · 8.EE.C.8c

Questions

Question 1

The graph shows the system $y = x + 1$ and $y = -x + 5$. What is the solution?



The lines cross at point A.

- A. (3,2)
- B. (2,3)
- C. (0,1)
- D. (0,5)

Question 2

Which ordered pair satisfies both $y = 3x + 1$ and $x + y = 5$?

- A. (1,4)
- B. (0,1)
- C. (2,3)
- D. (4,1)

Question 3

Solve by substitution: $y = x + 3$ and $2x + y = 12$.

- A. (6,3)
- B. (3,9)
- C. (3,6)
- D. (4.5,7.5)

Question 4

Solve by elimination: $x + y = 9$ and $x - y = 1$.

- A. (4,5)
- B. (5,4)
- C. (8,1)
- D. (10,-1)

Question 5

Which system has no solution?

- A. $y = 3x + 1$ and $y = -3x + 1$
- B. $y = 3x + 1$ and $y = 3x - 4$
- C. $y = 3x + 1$ and $6x - 2y = -2$
- D. $y = 3x + 1$ and $y = \frac{1}{3}x + 1$

Question 6

How many solutions does $y = 2x + 5$ and $4x - 2y = -10$ have?

- A. No solution
- B. Exactly one
- C. Infinitely many
- D. Exactly two

Question 7

Two numbers have a sum of 20 and a difference of 4. What are the numbers?

Sum	Difference
$x + y = 20$	$x - y = 4$

The two equations for the numbers.

- A. 10 and 10
- B. 16 and 4
- C. 14 and 6
- D. 12 and 8

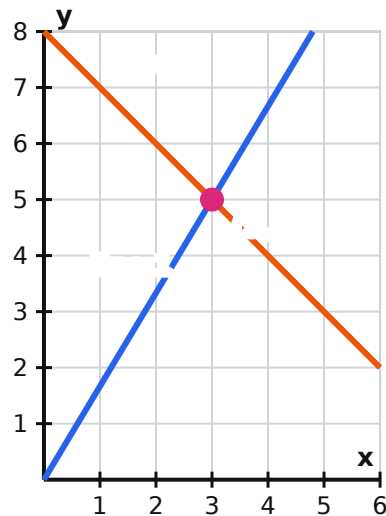
Question 8

Sofia buys 2 sandwiches and 1 juice for . Ethan buys 1 sandwich and 1 juice for . What does one sandwich cost?

- A. for a sandwich, for a juice
- B. for a sandwich, for a juice
- C. for a sandwich, for a juice
- D. for a sandwich, for a juice

Question 9

The graphs of two equations cross at $(3,5)$. What does this mean?



The graphs meet at $(3,5)$.

- A. $x=3$ and $y=5$ make both equations true
- B. $x=5$ and $y=3$ make both equations true
- C. $x=3$ and $y=5$ make only one equation true
- D. The two equations have no solution

Question 10

Which equation can be paired with $2x+y=8$ so the solution is $(3,2)$?

- A. $x-y=-1$
- B. $x+y=6$
- C. $x-y=1$
- D. $2x-y=3$

Answer key

1. **B** - The solution is the intersection point, $(2,3)$. The pair $(3,2)$ swaps the coordinates, and the others are intercepts of one line only.
2. **A** - $3(1)+1=4$ and $1+4=5$. The pair $(0,1)$ fits only the first equation, and $(2,3)$ fits only the second.
3. **C** - $2x+x+3=12$ gives $x=3$ and $y=6$. A common slip is swapping x and y .
4. **B** - Adding gives $2x=10$, so $x=5$ and $y=4$. Forgetting to divide by 2 gives wrong values.
5. **B** - Equal slopes with different y -intercepts give parallel lines. The system with $6x-2y=-2$ is the same line, so it has infinitely many solutions.
6. **C** - Solving the second equation for y gives $y=2x+5$, the same line. Two distinct lines never meet twice.
7. **D** - Adding the equations gives $2x=24$, so $x=12$ and $y=8$. The pair 14 and 6 has difference 8, not 4.
8. **D** - Subtract $s+j=7$ from $2s+j=11$ to get $s=4$, then $j=3$. Swapping the prices is the common error.
9. **A** - The intersection point lies on both lines, so its coordinates satisfy both equations.
10. **C** - $3-2=1$ is true for $(3,2)$, and $2(3)+2=8$ is true. The other equations are false at $(3,2)$.

Remember:

- Standards 8.EE.C.8a, 8.EE.C.8b and 8.EE.C.8c: solve systems of two linear equations in two variables and use them in real-world problems.
- The solution of a system is the point where the two graphs intersect.
- Substitution replaces one variable with an expression; elimination adds or subtracts equations to cancel a variable.
- Parallel lines (same slope, different intercepts) mean no solution; the same line twice means infinitely many.
- Always check the ordered pair in both original equations.