

Algebra 1 · Systems of Linear Equations · Test

Common Core A-REI.C.5, A-REI.C.6, A-REI.D.11, A-CED.A.3 · mathovore.fr

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

This test has ten questions worth 20 points in total and covers systems of linear equations from standards A-REI.C.5, A-REI.C.6, A-REI.D.11 and A-CED.A.3. Show every step, check each solution, and write answers as ordered pairs. You have 45 minutes.

Test information

- **Grade:** Algebra 1
- **Chapter:** Systems of Linear Equations
- **Common Core:** A-REI.C.5, A-REI.C.6, A-REI.D.11, A-CED.A.3
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 2 pts; Question 5: 2 pts; Question 6: 2 pts; Question 7: 2 pts; Question 8: 2 pts; Question 9: 2 pts; Question 10: 2 pts)

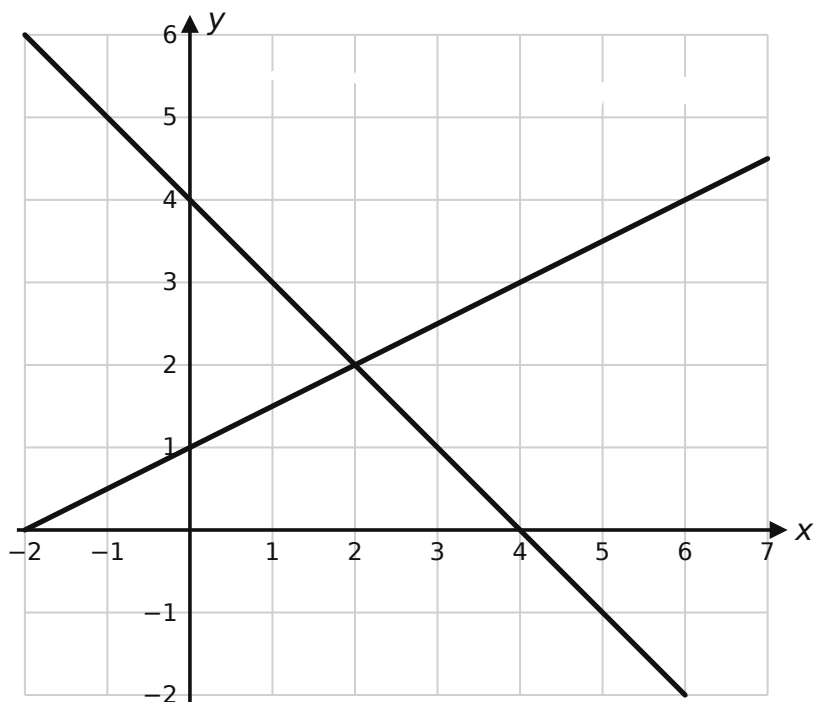
Question 1: Is it a solution? (2 points)

Consider the system $2x + y = 7$ and $x - 3y = 7$.

- Determine whether $(4, -1)$ is a solution. (1 point)
- Determine whether $(3, 1)$ is a solution. (1 point)

Question 2: Read the solution (2 points)

The graph shows the system $y = -x + 4$ and $y = \frac{1}{2}x + 1$.

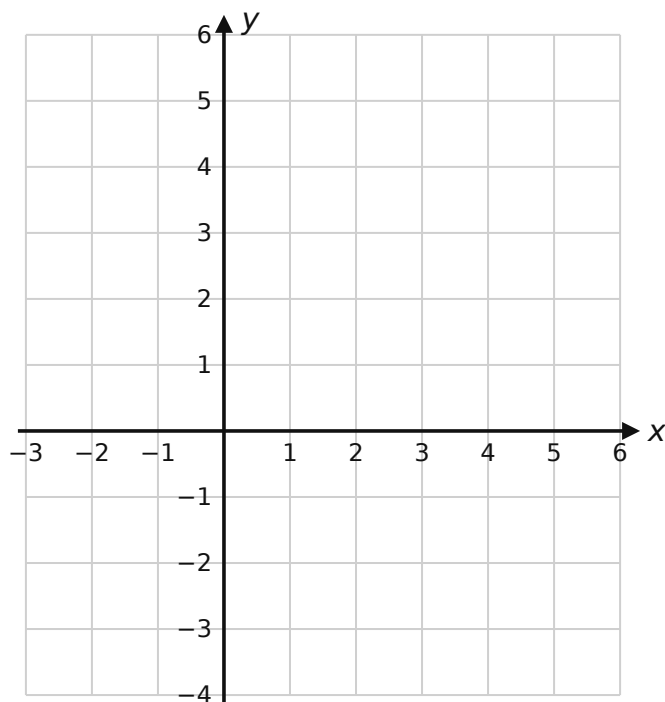


A system of two lines.

- a. State the solution of the system. (1 point)
- b. Show that this solution satisfies both equations. (1 point)

Question 3: Solve by graphing (2 points)

Graph $y = x - 1$ and $y = -2x + 5$ on the grid. State the solution of the system.



Grid for graphing.

Question 4: Substitution (2 points)

Solve the system $y = 4x - 7$ and $3x + 2y = 8$.

Question 5: Opposite coefficients (2 points)

Solve the system $5x + 3y = -1$ and $2x - 3y = -13$.

Question 6: Multiply first (2 points)

Solve the system $3x + 2y = 10$ and $5x + 3y = 17$.

Question 7: Count the solutions (2 points)

Determine how many solutions each system has. Justify each answer.

- $y = -3x + 2$ and $6x + 2y = 4$ (1 point)
- $4x - 2y = 6$ and $y = 2x + 5$ (1 point)

Question 8: Explain elimination (2 points)

Noah adds the equations $3x + y = 11$ and $2x - y = 4$ and gets $5x = 15$.

- Explain why every solution of the original system must also satisfy $5x = 15$. (1 point)

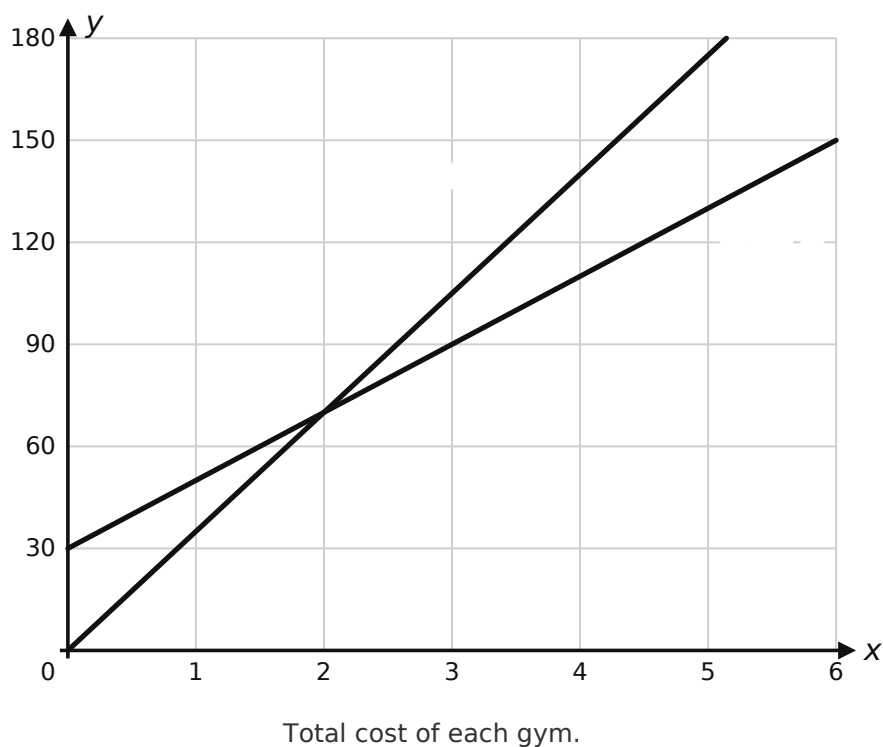
b. Find the solution of the original system. (1 point)

Question 9: Ticket problem (2 points)

Sofia's school sold 150 tickets to a concert. Student tickets cost \$6 and adult tickets cost \$10. Sales were \$1,100. How many student tickets and how many adult tickets were sold?

Question 10: Gym memberships (2 points)

Gym A charges a \$30 joining fee plus \$20 per month. Gym B has no joining fee and charges \$35 per month.



a. Write an equation for the total cost C after m months at each gym. (1 point)

b. Find the month when the two total costs are equal, and that cost. (1 point)