

Solving Systems of Linear Equations

Grade 8 math · Test · Standards: 8.EE.C.8a, 8.EE.C.8b, 8.EE.C.8c

Name: _____ Date: _____ Class: _____

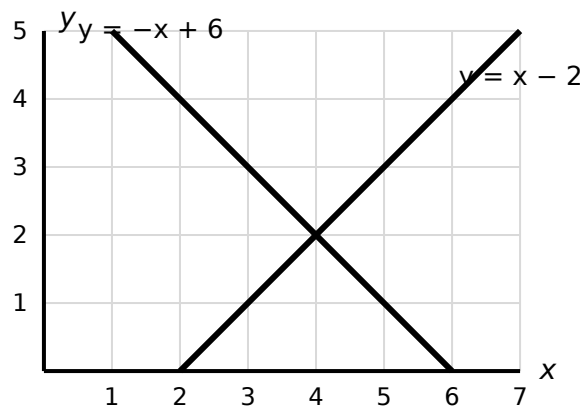
This test has 8 questions worth 20 points in total and should take about 45 minutes. Check each solution in the original equations, and show your substitution or elimination steps.

Standards: 8.EE.C.8a, 8.EE.C.8b, 8.EE.C.8c · **Level:** Grade 8

Time: 45 minutes · 8 questions · Total: 20 points · Calculator: as allowed by your teacher

Question 1 Read and verify (2 points)

The graph shows $y = x - 2$ and $y = -x + 6$. State the solution (1 point) and verify it in both equations (1 point).



Two lines on a grid.

Question 2 Substitution (3 points)

Solve by substitution:

$$\begin{aligned} y &= 4x - 5 \\ 2x + y &= 13 \end{aligned}$$

Question 3 Elimination (3 points)

Solve by elimination:

$$\begin{aligned} 4x + 3y &= 25 \\ 2x - 3y &= -1 \end{aligned}$$

Question 4 Classify the systems (3 points)

Without solving, state the number of solutions of each system. (1 point each)

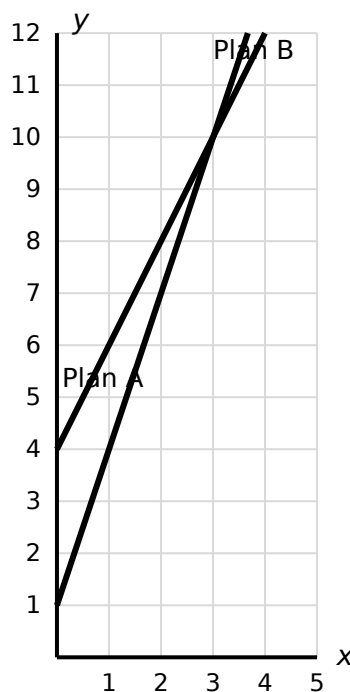
- a. $y = 5x - 2$ and $y = 5x + 7$
- b. $6x + 3y = 9$ and $2x + y = 3$
- c. $y = 4x$ and $y = -x$

Question 5 County fair tickets (3 points)

Adult tickets cost \$9 and child tickets cost \$5. A total of 120 tickets were sold for \$860. Write a system (1 point) and find how many of each were sold (2 points).

Question 6 Pool memberships (3 points)

Plan A: \$4 fee plus \$2 per visit ($y = 2x + 4$). Plan B: \$1 fee plus \$3 per visit ($y = 3x + 1$). The graph shows both.



Cost in dollars against number of visits.

- a. Read the intersection point. (1 point)
- b. Explain what it means. (1 point)
- c. Which plan is cheaper for 5 visits? (1 point)

Question 7 Is it a solution? (2 points)

Is $(-2, 5)$ a solution of the system $2x + y = 1$ and $x - y = -7$? Show each check. (1 point per

equation)

Question 8 Parallel on purpose (1 point)

Write a second equation so that the system with $y = 2x + 1$ has no solution.