

Algebra 1 · Graphing Linear Inequalities and Systems of Inequalities · Test

Common Core A-REI.D.12, A-CED.A.3 · mathovore.fr

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

This test has ten questions worth 20 points in total and covers graphing linear inequalities and systems from standards A-REI.D.12 and A-CED.A.3. Draw boundary lines carefully, show your test points, and shade clearly. You have 45 minutes.

Test information

- **Grade:** Algebra 1
- **Chapter:** Graphing Linear Inequalities and Systems of Inequalities
- **Common Core:** A-REI.D.12, 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: Test two points (2 points)

Consider the inequality $y > 2x - 3$.

- Determine whether $(-1, 2)$ is a solution. (1 point)
- Determine whether $(3, -4)$ is a solution. (1 point)

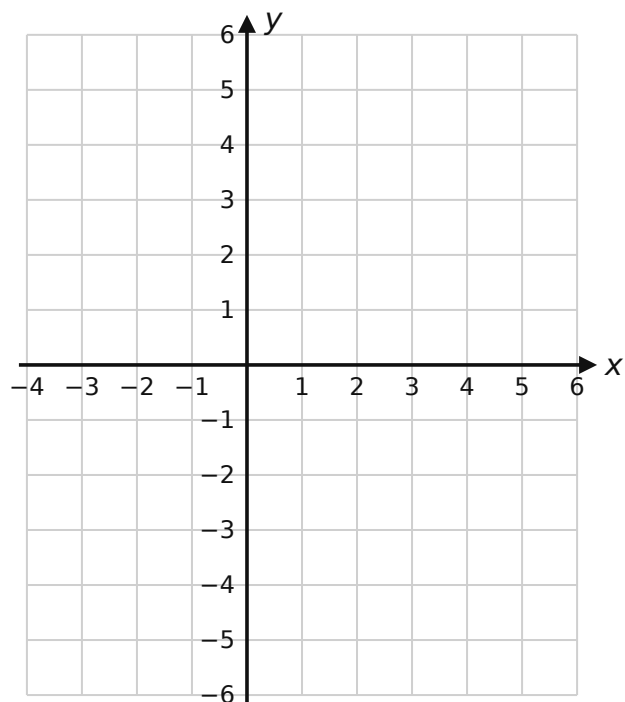
Question 2: Line and shading (2 points)

For each inequality, state whether the boundary line is solid or dashed and whether the shading is above or below the line.

- $y < \frac{1}{2}x + 2$ (1 point)
- $y \geq -x + 1$ (1 point)

Question 3: Graph one inequality (2 points)

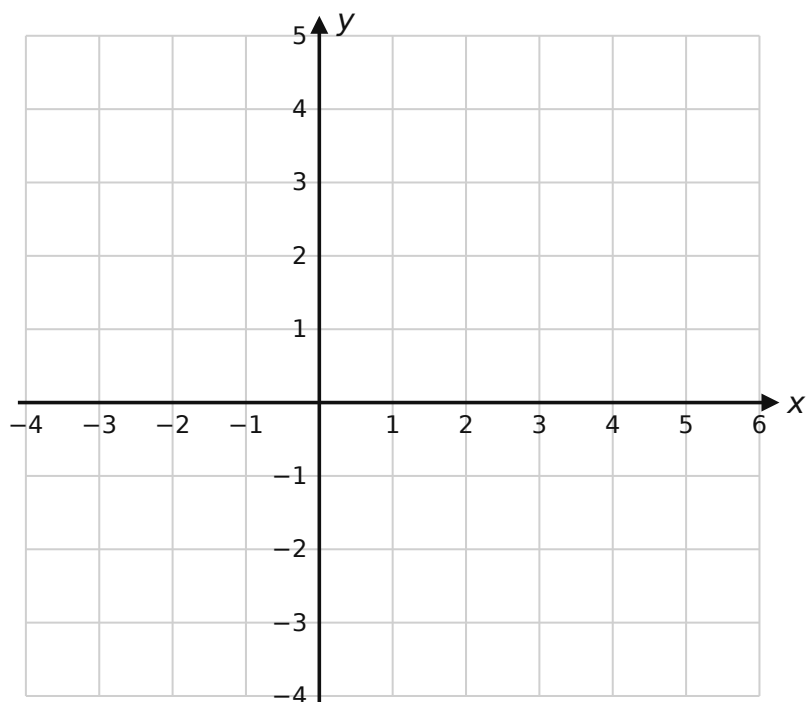
Graph $y \geq 2x - 4$ on the grid.



Grid for graphing.

Question 4: Standard form (2 points)

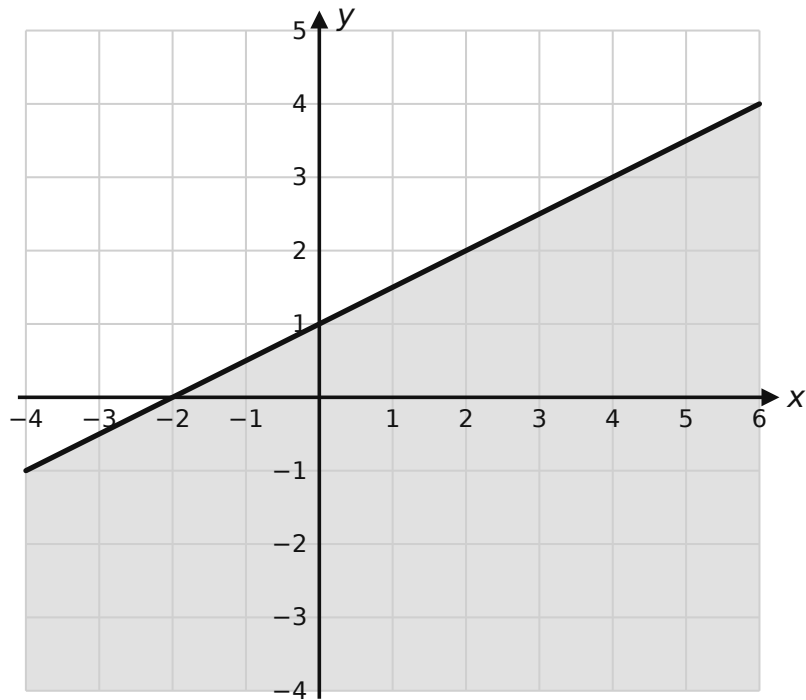
Graph $x + 2y < 4$ on the grid.



Grid for graphing.

Question 5: Write from a graph (2 points)

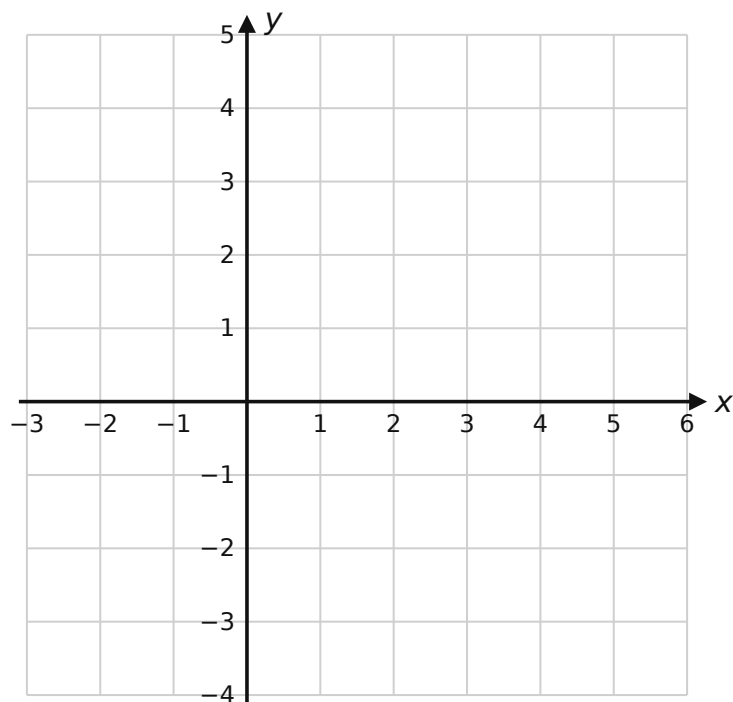
Write the inequality represented by the graph.



A shaded half-plane.

Question 6: Graph a system (2 points)

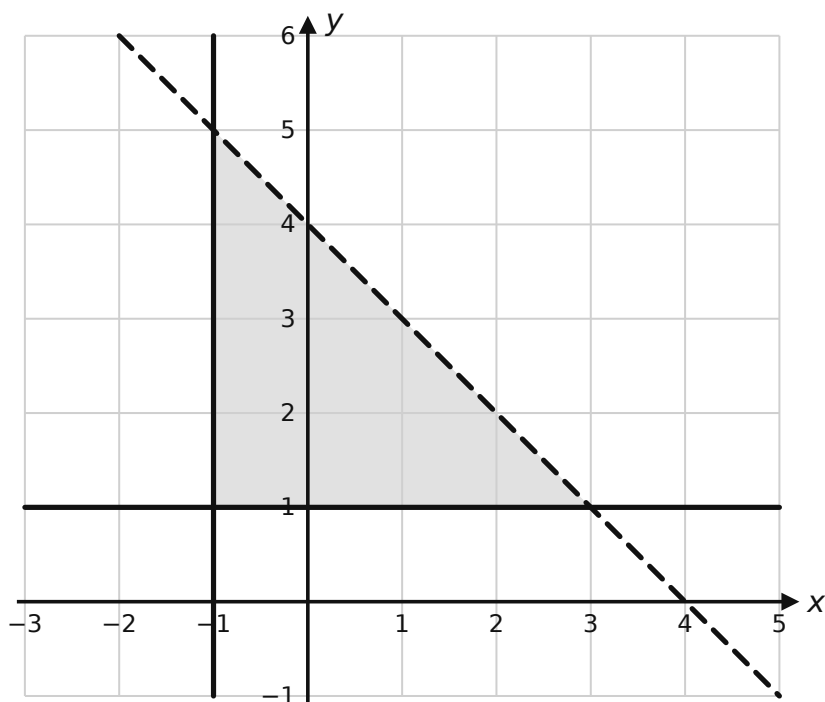
Graph the system $y > -x + 1$ and $y \leq 2x - 2$ on the grid. Show the solution region clearly.



Grid for graphing.

Question 7: Read a system (2 points)

The graph shows the solution region of a system of three inequalities.



A triangular solution region.

- a. Write the system. (1 point)
- b. Determine whether $(1,2)$ and $(3,2)$ are solutions. (1 point)

Question 8: Overlap or not (2 points)

- a. Does the system $y > 2x + 1$ and $y < 2x - 3$ have a solution? Explain. (1 point)
- b. Describe the solution set of the system $y \geq 3$ and $y \leq 3$. (1 point)

Question 9: Bake sale goal (2 points)

Priya sells cupcakes for \$3 each and brownies for \$2 each. She wants to earn at least \$48. Let x be cupcakes and y be brownies.

- a. Write an inequality for her goal. (1 point)
- b. Determine whether selling 10 cupcakes and 9 brownies reaches the goal. (1 point)

Question 10: Shirts and caps (2 points)

Jamal has at most \$24 to spend. Shirts cost \$8 each and caps cost \$6 each. He wants at least 2 shirts. Let x be shirts and y be caps.

- a. Write a system of inequalities for the situation. (1 point)
- b. Determine whether buying 3 shirts and 1 cap is possible, and whether buying 2 shirts and 1 cap is possible. (1 point)