

Algebra 1 - Linear Inequalities in Two Variables and Systems - Quiz

Common Core A-REI.D.12, A-CED.A.3 · maths-pdf.fr/en/

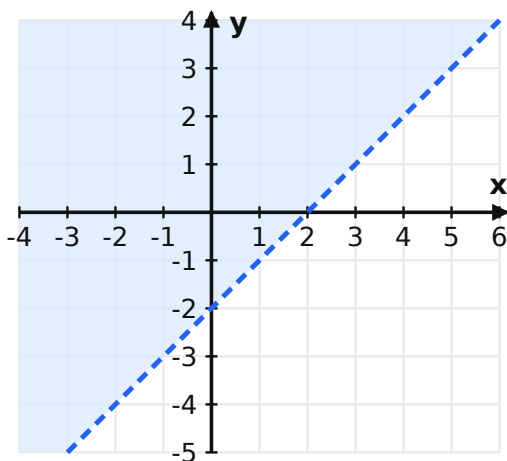
Name: _____ Class: _____ Date: ____/____/____

This quick quiz has 10 questions about linear inequalities in two variables and systems, matching Common Core A-REI.D.12 and A-CED.A.3. Choose the best answer, then use the explanation to learn from every miss. The wrong choices come from common mistakes, so read them with care before you decide.

Algebra 1 · Common Core State Standards: **A-REI.D.12, A-CED.A.3**

Questions

Question 1



Which inequality is graphed?

- A. $y > x - 2$
- B. $y \geq x - 2$
- C. $y < x - 2$
- D. $y > x + 2$

Question 2

Which point is a solution of $y < 2x + 1$?

- A. (0,2)

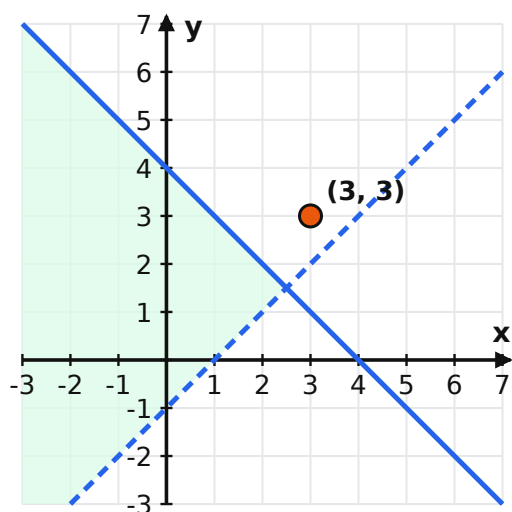
- B. (2,3)
- C. (1,3)
- D. (-1,0)

Question 3

Which boundary line should be solid?

- A. $y \geq 3x - 2$
- B. $y > 3x - 2$
- C. $y < 3x - 2$
- D. $y > 3$

Question 4



Is (3,3) in the solution region of the graphed system?

- A. Yes, it is in the overlap
- B. No, it is on the dashed line
- C. No, it is below both lines
- D. No, it is above the solid line

Question 5

Solve for y : $4x - 2y > 6$.

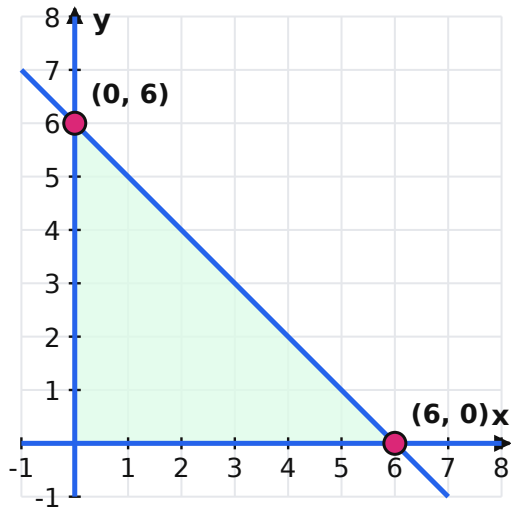
- A. $y < 2x - 3$
- B. $y > 2x - 3$
- C. $y < -2x + 3$
- D. $y > -2x - 3$

Question 6

Which test point is NOT on the boundary of $y \geq x+1$ and is easy to use?

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

Question 7



Which system describes the shaded triangle?

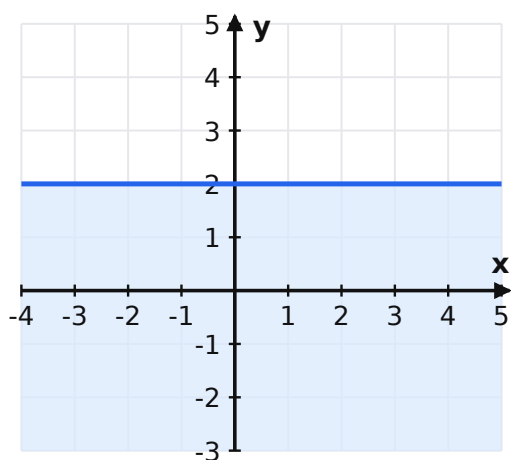
- A. $x \geq 0, y \geq 0, x+y \geq 6$
- B. $x \geq 0, y \geq 0, x+y \leq 6$
- C. $x \leq 0, y \leq 0, x+y \leq 6$
- D. $x \geq 0, y \geq 0, x-y \leq 6$

Question 8

Ethan can spend at most \$30 on tickets. Adult tickets cost \$6 (x) and child tickets cost \$3 (y). Which inequality models this?

- A. $6x+3y \geq 30$
- B. $3x+6y \leq 30$
- C. $6x+3y = 30$
- D. $6x+3y \leq 30$

Question 9



Which inequality is graphed?

- A. $y < 2$
- B. $y \leq 2$
- C. $y \geq 2$
- D. $x \leq 2$

Question 10

Is $(4,2)$ a solution of $x+2y \leq 8$?

- A. No, because $8 > 8$
- B. No, because $6 > 8$
- C. Yes, because $8 \leq 8$
- D. Yes, because $8 < 8$

Answers

1. **A** – The line is dashed, so the symbol is strict, and the shading is above, so y is greater.
2. **B** – For $(2, 3)$: $3 < 5$ is true. For $(1, 3)$: $3 < 3$ is false because the inequality is strict.
3. **A** – Only inequalities with $\leq$ or $\geq$ have solid boundaries.
4. **D** – Check $y \leq -x + 4$: $3 \leq 1$ is false, so $(3, 3)$ is not a solution even though it satisfies $y > x - 1$.
5. **A** – Subtract $4x$: $-2y > -4x + 6$. Dividing by -2 reverses the symbol: $y < 2x - 3$.
6. **C** – The points $(0, 1)$, $(1, 2)$, and $(2, 3)$ all lie on the line $y = x + 1$, so they cannot decide the side. $(0, 0)$ does.
7. **B** – The triangle lies in the first quadrant and below the line $x + y = 6$.
8. **D** – At most means less than or equal to, and each ticket price multiplies its own count.
9. **B** – The line is solid, so the symbol includes equality, and the shading is below, so y is less than or equal to 2.
10. **C** – Substitute: $4 + 2(2) = 8$, and $8 \leq 8$ is true. Points on a solid boundary are solutions.

Remember

- A solution of an inequality in two variables is an ordered pair that makes it true.
- The boundary line is solid for $\leq$ and $\geq$, and dashed for $<$ and $>$.
- Test a point not on the line to decide which side to shade.
- For $y > mx + b$, shade above; for $y < mx + b$, shade below.
- The solution of a system is the overlap of the shaded regions.