

Algebra 1 · Linear and Compound Inequalities · Quiz

Common Core A-REI.B.3, A-CED.A.1, A-CED.A.3 · mathovore.fr

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

Answer these 10 multiple-choice questions on linear and compound inequalities. Each question has exactly one correct answer. Work the problem on paper first, then choose, and read the explanation for any miss.

Algebra 1 Common Core: **A-REI.B.3 · A-CED.A.1 · A-CED.A.3**

Questions

Question 1

What is the solution of $-2x+5>13$?

- A. $x > -4$
- B. $x < 4$
- C. $x > 4$
- D. $x < -4$

Question 2

Which inequality matches the graph?



Graph of $x \geq 3$.

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

Question 3

What is the solution of $3(x-2) \leq 2x+1$?

- A. $x \leq 7$

- B. $x \geq 7$
- C. $x \leq -5$
- D. $x \leq 1.4$

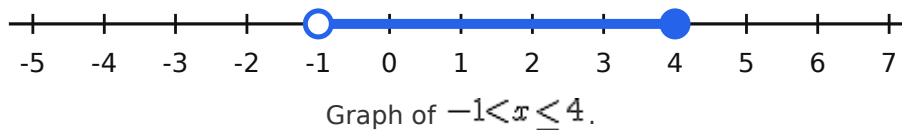
Question 4

Which is the interval notation for $x \geq -4$?

- A. $[-4, \infty)$
- B. $(-4, \infty)$
- C. $(-\infty, -4]$
- D. $(-\infty, -4)$

Question 5

Which inequality matches the graph?



- A. $-1 \leq x < 4$
- B. $-1 < x \leq 4$
- C. $-1 < x < 4$
- D. $x < -1$ or $x \geq 4$

Question 6

What is the solution of $2 \leq 3x - 4 < 11$?

- A. $2 < x \leq 5$
- B. $6 \leq x < 15$
- C. $2 \leq x < 5$
- D. $\frac{2}{3} \leq x < \frac{11}{3}$

Question 7

What is the solution of $x - 3 < -2$ or $2x \geq 10$?

- A. $x < -5$ or $x \geq 5$
- B. $x \leq 1$ or $x > 5$
- C. $1 < x < 5$
- D. $x < 1$ or $x \geq 5$

Question 8

Maya has \$30. A sandwich costs \$6 and each drink costs \$1.75. What is the greatest whole number of drinks she can buy with the sandwich?



The budget covers the sandwich and the drinks.

- A. 13 drinks
- B. 14 drinks
- C. 17 drinks
- D. 24 drinks

Question 9

Which value is a solution of $-3x+1>10$?

- A. $x = -3$
- B. $x = 0$
- C. $x = -4$
- D. $x = 4$

Question 10

What is the solution of $2(x+4)>2x+3$?

- A. No solution
- B. $x > 2.5$
- C. All real numbers
- D. $x < 2.5$

Answer key

1. **D** - Subtract 5 to get $-2x > 8$, then divide by -2 and reverse the sign: $x < -4$. Forgetting to reverse gives $x > -4$.
2. **B** - A closed circle at 3 includes 3, and the ray points right toward larger numbers, so $x \geq 3$. An open circle would mean $x > 3$.
3. **A** - Distribute: $3x - 6 \leq 2x + 1$. Subtract $2x$ and add 6: $x \leq 7$. No division by a negative occurs, so the sign stays.
4. **A** - The endpoint -4 is included, so use a bracket. The solution continues to larger numbers, so it ends at infinity with a parenthesis.
5. **B** - The open circle at -1 excludes -1 and the closed circle at 4 includes 4, with the overlap between them.
6. **C** - Add 4 to all parts: $6 \leq 3x < 15$, then divide by 3. Forgetting to add 4 gives $\frac{2}{3} \leq x < \frac{11}{3}$.
7. **D** - First part: add 3 to get $x < 1$. Second part: divide by 2 to get $x \geq 5$. With or, both rays are part of the solution.
8. **A** - Solve $6 + 1.75d \leq 30$: $d \leq 13.71$, so 13. Rounding up to 14 would cost \$30.50.
9. **C** - The solution is $x < -3$. The value -3 makes both sides equal, so it is not a solution.
10. **C** - Distribute: $2x + 8 > 2x + 3$. Subtract $2x$: $8 > 3$, which is always true.

Remember:

- Standards A-REI.B.3, A-CED.A.1 and A-CED.A.3 cover solving, writing and modeling with linear inequalities.
- Reverse the inequality sign when multiplying or dividing both sides by a negative number.
- Open circle or parenthesis excludes an endpoint; closed circle or bracket includes it.
- And means the overlap of the two solution sets; or means their union.
- In context, check whether the solution must be a whole number.