

Algebra 1 · Linear and Compound Inequalities · Worksheet

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

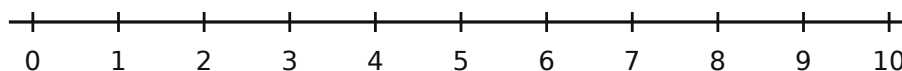
Name: _____ Date: ____/____/____ Score: _____

These 22 problems practice Common Core standards A-REI.B.3, A-CED.A.1 and A-CED.A.3. Solve multi-step inequalities, remember to reverse the sign when dividing by a negative, graph solutions and write interval notation, and work with compound inequalities joined by and or or. The last six are word problems that ask for an inequality first.

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

Problem 1: One-step graph

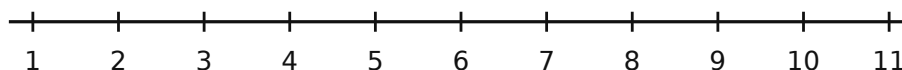
Solve $3x+4>19$ and graph the solution.



Number line for the graph.

Problem 2: Closed circle

Solve $5x-7\leq 28$ and graph the solution.



Number line for the graph.

Problem 3: Divide by a negative

Solve $-2x+9<15$.

Problem 4: Distribute and solve

Solve $4(x-3) \geq 2x+6$.

Problem 5: Variables on both sides

Solve $7-3x > 2x-8$.

Problem 6: Fraction coefficient

Solve $\frac{x}{3}-2 \leq 4$.

Problem 7: Negative fraction

Solve $-\frac{2}{3}x \geq 8$.

Problem 8: Negative outside parentheses

Solve $-2(x+4) < 6$.

Problem 9: Fractions on both sides

Solve $\frac{x+1}{2} \geq \frac{2x-1}{3}$.

Problem 10: Decimal inequality

Solve $0.6x-1.5 < 0.2x+2.5$.

Problem 11: All or none

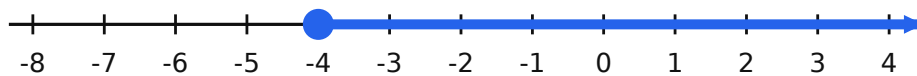
Solve each inequality.

a. $3(x+2) > 3x+1$

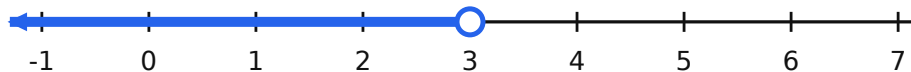
b. $2x+5 < 2x-1$

Problem 12: Read the graph

Write an inequality and interval notation for each graph.



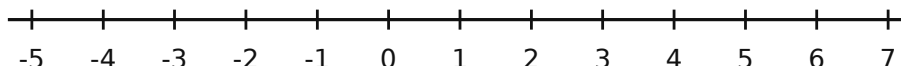
Graph (a): $x \geq -4$.



Graph (b): $x < 3$.

Problem 13: Compound with and

Solve $-3 < 2x + 1 \leq 9$ and graph the solution.



Number line for the graph.

Problem 14: Compound with or

Solve $2x - 1 < -5$ or $3x + 2 \geq 11$ and graph the solution.

Problem 15: Three-part inequality

Solve $4 \leq 3x - 2 < 13$.

Problem 16: Overlap of two conditions

Solve $x + 3 > 1$ and $2x \leq 10$.

Problem 17: School store budget

Diego has \$50. A backpack costs \$18.50 and each T-shirt costs \$6.25. Write and solve an inequality for the number of T-shirts t he can add. What is the greatest whole number?

Problem 18: Weekend job

Aisha earns \$12 per hour and pays \$15 for bus fare. She wants to take home at least \$150. How many hours must she work?

Problem 19: Elevator limit

An elevator holds at most 1,200 pounds. Liam loads a cart that weighs 180 pounds and boxes that weigh 35 pounds each. How many boxes can he load?

Problem 20: Car rental

Rental company A charges \$30 per day plus \$0.20 per mile. Company B charges \$45 per day with unlimited miles. For how many miles in one day is A cheaper?

Problem 21: Test average

Mei scored 88, 92 and 85 on three tests. She wants an average of at least 90 after the fourth test, and the highest possible score is 100. Write a compound inequality for her fourth score s .

Problem 22: Saving up

Sofia has \$35 and saves \$5 each week. After how many weeks will she have between \$100 and \$150, inclusive?