

Algebra 1 - Linear Inequalities in One Variable - Worksheet

Common Core A-REI.B.3, A-CED.A.1 · maths-pdf.fr/en/

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

These 20 problems practice linear inequalities (Common Core A-REI.B.3 and A-CED.A.1). You will solve and graph one-variable inequalities, reverse the symbol when needed, work with and/or compounds, and model situations with at least and at most. The first problems are short skill checks, and the last six are word problems that need several steps. Work in order and show every line of your work, because a bare answer earns little credit on a test.

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

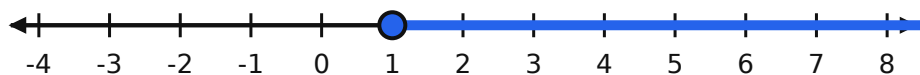
Exercise 1 - Graph x greater than 3

Graph $x > 3$ on a number line.

Exercise 2 - Graph with a closed circle

Graph $x \leq -2$ on a number line.

Exercise 3 - Write from a graph



Graph of an inequality.

Write the inequality shown on the number line.

Exercise 4 - Add and compare

Solve $x + 5 < 12$.

Exercise 5 - Subtract on both sides

Solve $x - 4 \geq -1$.

Exercise 6 - Divide by a positive

Solve $3x > 18$.

Exercise 7 - Divide by a negative

Solve $-2x \leq 10$.

Exercise 8 - Divide by a negative fraction form

Solve $\frac{x}{-3} < 4$.

Exercise 9 - Two-step

Solve $2x - 5 \geq 9$.

Exercise 10 - Two-step with a negative

Solve $-3x + 4 > 19$.

Exercise 11 - Variables on both sides

Solve $5x + 2 \leq 3x + 12$.

Exercise 12 - Distribute

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

Exercise 13 - Fraction coefficient

Solve $\frac{2}{3}x - 1 \geq 5$.

Exercise 14 - And compound

Solve $-5 \leq 3x - 2 < 7$ and graph the solution.

Exercise 15 - Or compound

Solve $x - 3 < -5$ or $2x \geq 8$ and graph the solution.

Exercise 16 - Smoothies

Smoothies	Cost
10	\$45.00
13	\$58.50
14	\$63.00

Smoothie costs.

Priya has \$60. Each smoothie costs \$4.50. Write and solve an inequality for the number of smoothies s she can buy. What is the greatest whole number?

Exercise 17 - Saving for a bike

Noah has \$44 and earns \$12 for each lawn he mows. He wants at least \$200 for a bike. Write and solve an inequality for the number of lawns n , then find the least whole number.

Exercise 18 - Elevator limit

Boxes	Total weight
17	945 lb
18	990 lb
19	1,035 lb

Total weight with Jamal.

An elevator holds at most 1,000 pounds. Jamal weighs 180 pounds and carries boxes that weigh 45 pounds each. Write and solve an inequality for the number of boxes b , then find the greatest whole number.

Exercise 19 - Phone plans

Texts	Plan A	Plan B
100	\$40	\$45
150	\$45	\$45
200	\$50	\$45

At 150 texts the plans cost the same.

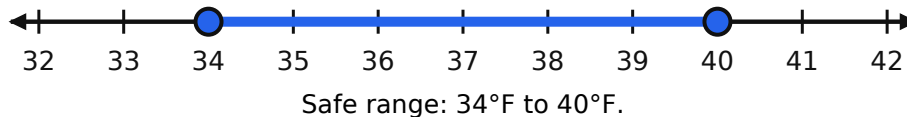
Plan A costs \$30 plus \$0.10 per text. Plan B is a flat \$45. Write and solve an inequality to find

the number of texts t for which Plan A costs less than Plan B.

Exercise 20 - Average score

Liam scored 82, 90, and 78 on his first three tests. He wants an average of at least 85 after the fourth test. Write and solve an inequality for the fourth score x .

Exercise 21 - Cooler temperature



Food stays safe in a cooler while its temperature is between 34°F and 40°F, inclusive. The cooler starts at 34°F and warms 1.5°F each hour. Write and solve a compound inequality for the hours h the food stays safe.