UNIT 7 · STANDARD 6.EE.5

Solve and Graph Inequalities

Lesson 7-6

Name: Type your name **Date:** Today's date **Class:** Class period

Key Vocabulary Level 2 Standard

Picture first, then the word, then a plain-language meaning. Say each word out loud.

x + 2 = 7

balanced with =

x + 3 > 10 → subtract 3 → x > 7 — any number greater than 7 works

Solve

Write the definition:

x > 7: open circle at 7, shade right — shows all solutions at a glance

Graph

Write the definition:

x + 2 = 7

balanced with =

x = 8 is a solution to x > 7 because 8 > 7 is true; x = 5 is not because 5 > 7 is false

Solution

Write the definition:

x → 5

put a number in for x

Substitute x = 5 into x + 3 > 10: 5 + 3 = 8, and 8 > 10 is false, so x = 5 is not a solution

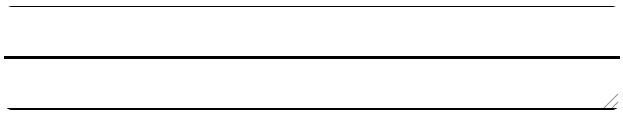
Substitute

Write the definition:

For x > 4, the solution set is every number greater than 4, such as 5, 6, 7, ...

Solution set

Write the definition:



To solve x + 3 > 7, use the inverse of adding 3: subtract 3 to get x > 4.

Inverse operation

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can solve an inequality and graph its solution set on a number line.

✏️ **Fill in each blank as we go. Use the Word Bank to help you.**

📚 **WORD BANK — FILL EACH BLANK WITH THE BEST WORD**

Solve | Graph | Solution | Substitute | Solution set | Inverse operation

☝️ *Tap any word to see what it means and a picture.*

1. To find all the values that make an inequality true is to _____ it.

2. To show the solutions on a number line is to _____ them.

3. A value that makes an inequality true is a _____.

4. To check a solution, I _____ the value back into the inequality.

5. All the values that make an inequality true form the _____.

6. An operation that undoes another to isolate the variable is an _____.

🧱 Watch & Try — Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

👀 I do — watch

Follow each step as your teacher solves it.

Problem: Solve: $x + 6 > 14$

A. $x > 8$

B. $x > 20$

C. $x < 8$

D. $x = 8$

Step 1 Subtract 6 from both sides: $x > 14 - 6 = 8$.

Step 2 Graph: open circle at 8, shade right.

✅ **Answer:** A. $x > 8$

🧩 Try — put the steps in order

Drag the cards (or use the ▲▼ buttons) to put the solution steps in the right order, then press **Check**.

Graph: open circle at 8, shade right.

Subtract 6 from both sides: $x > 14 - 6 = 8$.

🤝 We do — together

Solve this one with your class using the same steps.

Problem: Solve: $x - 9 \leq 3$

A. $x \leq 12$

B. $x \leq 6$

C. $x \geq 12$

D. $x = 12$

Step 1 _____

Step 2 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: Solve: $x + 10 \geq 25$

A. $x \geq 15$

B. $x \geq 35$

C. $x \leq 15$

D. $x = 15$

Show your work:

Try It

Solve on your own. Check the answer key when you are done.

1. Clue 2: Is 5 a solution of x ≤ 5?

A. Yes, because 5 ≤ 5 is true

B. No, because 5 is not less than 5

C. No, because ≤ means only smaller numbers

D. Yes, but only because 5 is odd

Show your work:

2. Final gate — describe the solution set. The vault rule is x > 7. What does the solution set mean?

A. All numbers greater than 7, like 8, 9, 10, … (but NOT 7 itself)

B. Only the number 7

C. All numbers less than 7

D. Every number, including 7

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A detective has a budget of at most $100 for supplies. She already spent $37 on gloves. Write an inequality for the remaining amount r she can spend, solve it, graph it, and name three possible values for r.

Sentence starter: Inequality: 37 + r ≤ ____. Solving: r ≤ ____ − 37 = ____. Graph: ____ circle at ____, shade ____. Three possible values: ____.

Show your work:

Reflect — Exit Ticket

Solve and describe the graph: x + 5 < 11

A. x < 6; open circle at 6, shade left

B. x < 16; open circle at 16, shade left

C. x ≤ 6; closed circle at 6, shade left

D. x > 6; open circle at 6, shade right

Your answer: