LESSON MAKER PRO

# Solve the Situation

*Write, solve, and graph one-step equations and inequalities.*

**GRADE 6 · TEKS 6.9**

**6.9** "Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to represent situations. The student is expected to: write one-variable..."

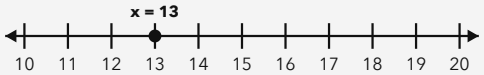
**NAME** _____ **DATE** _____

## TURN WORDS INTO MATH

Use an equation when a situation gives an exact total. Use an inequality when a condition has many possible answers, then undo the operation and show the solution with a point or shading on a number line.

## WORKED EXAMPLE

Eli began with 18 arcade tickets and used 5 tickets. Let x be the tickets left. Write and solve an equation.




1. Let x be the tickets left. Write x + 5 = 18.
2. Subtract 5 from both sides: x = 13.
3. Plot a solid point at 13.

**Answer: x + 5 = 18; x = 13**

## PRACTICE 4 problems

**1** A shelf has x graphic novels. After 3 more are placed on it, it holds 14. Write and solve an equation.

**ANSWER** _____

**2** Nia had x game tokens. She traded 6 tokens and has 9 left. Write and solve an equation.

**ANSWER** _____

**3** At most 12 students may enter the coding room. Seven are already inside. Let x be the number who may still enter. Write and solve an inequality.

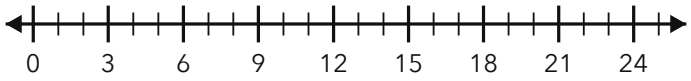
**ANSWER** _____

**4** A playlist needs at least 16 songs. It already has 10 songs. Let x be the number of songs to add. Write and solve an inequality.

**ANSWER** _____

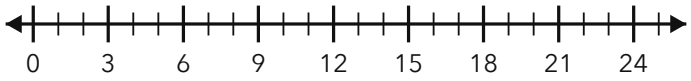
## APPLY IT Show your work

**1** The robotics club has x votes for its team name. After receiving 8 more votes, it has 21 votes. Write and solve an equation. Plot the solution on the number line.




**ANSWER** _____

**2** Jordan has $24 to spend at a game store. A phone grip costs $9. Let x be the amount Jordan can spend on a used game. Write and solve an inequality. Shade the possible amounts on the number line.




**ANSWER** _____

## CHALLENGE One step up

Write a brief real-world problem that matches x - 7 = 19. State what x means and solve the equation.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Solve the Situation

**GRADE 6 · TEKS 6.9**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | A shelf has x graphic novels. After 3 more are placed on it, it holds 14. Write and solve an equation. | **x + 3 = 14; x = 11** |
| 2 | Nia had x game tokens. She traded 6 tokens and has 9 left. Write and solve an equation. | **x - 6 = 9; x = 15** |
| 3 | At most 12 students may enter the coding room. Seven are already inside. Let x be the number who may still enter. Write and solve an inequality. | **x + 7 <= 12; 0 <= x <= 5** |
| 4 | A playlist needs at least 16 songs. It already has 10 songs. Let x be the number of songs to add. Write and solve an inequality. | **x + 10 >= 16; x >= 6** |

## PART 2 · APPLY IT

1. **x + 8 = 21; x = 13. Plot a solid point at 13.** Subtract 8 from 21 to find the number of votes before the new votes arrived.
2. **x + 9 <= 24; 0 <= x <= 15. Shade from 0 through 15, including 15.** Subtract 9 from both sides. The amount spent cannot be negative, so x is at least 0.

## CHALLENGE

**Sample answer: A music app has x downloaded songs. After 7 songs are deleted, 19 songs remain, so x means the original number of downloaded songs and x = 26.**

Accept equivalent equation forms, such as 14 = x + 3. For count situations, accept whole-number solutions within the stated nonnegative range.