LESSON MAKER PRO

Solve the Scene

Use equations and angle facts to solve real situations.

GRADE 7 · TEKS 7.11

7.11 "Expressions, equations, and relationships. The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to: model and solve one-variable, two-step equations and inequalities..."

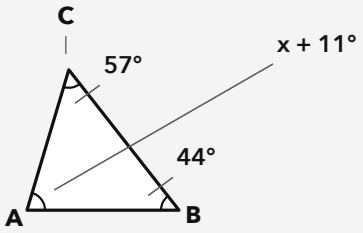
NAME _____ DATE _____

BUILD, SOLVE, CHECK

Turn the situation into an equation or inequality. For a triangle, the three interior angles add to 180°. Undo operations in reverse order, then substitute your answer to check it.

WORKED EXAMPLE

The three angles of a game-logo triangle are shown. Find x.



1. (x + 11) + 44 + 57 = 180
2. x + 112 = 180
3. x = 68

Answer: x = 68

PRACTICE 4 problems

1 A gamer spends a total of $25 on coin packs and a fixed $4 service fee. Each pack costs $3. Write an equation and find the number of packs.

ANSWER _____

2 A video editor earns 6 points per clip, loses 5 points for a late upload, and needs at least 25 points. Does x = 5 clips meet the goal? Show a substitution.

ANSWER _____

3 A student has at most $37 for art sessions. A membership fee is $9, and each session costs $4. Write and solve an inequality for x sessions.

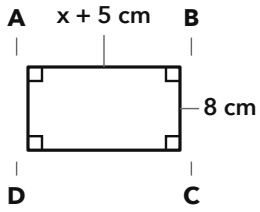
ANSWER _____

4 A robotics club earns $5 for each snack ticket sold and pays a $9 booth fee. The club has $31 left. Write an equation and find the number of tickets sold.

ANSWER _____

APPLY IT Show your work

1 The poster frame shown has a perimeter of 46 cm. Write and solve an equation for x.



ANSWER _____

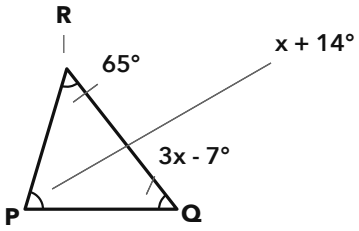
2 A movie club has $30 for rentals. The app charges a $6 service fee plus $3 per movie. How many movies can the club rent at most? Write and solve an inequality.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A game designer uses the triangular badge shown. Find x. Then explain why the angle equation has a total of 180°.



WORK SPACE AND ANSWER

ANSWER KEY # Solve the Scene

GRADE 7 · TEKS 7.11

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A gamer spends a total of $25 on coin packs and a fixed $4 service fee. Each pack costs $3. Write an equation and find the number of packs.	**3x + 4 = 25; x = 7 packs**
2	A video editor earns 6 points per clip, loses 5 points for a late upload, and needs at least 25 points. Does x = 5 clips meet the goal? Show a substitution.	**Yes; 6(5) - 5 >= 25, so 25 >= 25.**
3	A student has at most $37 for art sessions. A membership fee is $9, and each session costs $4. Write and solve an inequality for x sessions.	**4x + 9 <= 37; x <= 7, so 7 sessions.**
4	A robotics club earns $5 for each snack ticket sold and pays a $9 booth fee. The club has $31 left. Write an equation and find the number of tickets sold.	**5x - 9 = 31; x = 8 tickets**

PART 2 · APPLY IT

1. **2(x + 5) + 2(8) = 46; x = 10** Use both pairs of equal sides in the perimeter. Solve 2x + 26 = 46.
2. **3x + 6 <= 30; x <= 8, so 8 movies** Subtract the service fee, then divide by 3. The number of movies must be a whole number.

CHALLENGE

x = 27; the three interior angles of a triangle add to 180°.

Accept equivalent equations and inequalities. For the inequality contexts, accept x <= 7 and x <= 8, with the stated whole-number maximums.