LESSON MAKER PRO

Equation Quest

Solve one-step equations and inequalities from numbers and real situations.

GRADE 6 · TEKS 6.10.A

6.10.A "model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts; and"

NAME _____ DATE _____

UNDO TO SOLVE

Use the inverse operation to get x alone. Add or subtract to undo addition or subtraction, and multiply or divide to undo multiplication or division. For an inequality, do the same operation on both sides, but reverse the inequality sign when you multiply or divide by a negative number.

WORKED EXAMPLE

Solve x / 7 = 9.

1. Multiply both sides by 7.
2. x = 9 × 7.
3. x = 63.

Answer: x = 63

PRACTICE 6 problems

1 Solve x + 14 = 31.

ANSWER _____

2 Solve x - 6 = 21.

ANSWER _____

3 Solve 5x = 55.

ANSWER _____

4 Solve x / 4 = 13.

ANSWER _____

5 Solve x + 11 < 30.

ANSWER _____

6 A square has a perimeter of 56 centimeters. Each side is x centimeters. Write and solve an equation for x.

ANSWER _____

APPLY IT Show your work

1 Six friends split 48 digital trading cards equally. Let x be the number of cards each friend gets. Write and solve an equation.

WORK SPACE

ANSWER _____

2 Maya has 28 points in a game. She needs more than 45 points to unlock a new level. Let x be the number of points she earns next. Write and solve an inequality. How many more whole points must she earn?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Solve $-2x > -24$. Then explain in one sentence why the inequality sign changes.

WORK SPACE AND ANSWER

ANSWER KEY # Equation Quest

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve x + 14 = 31.	**x = 17**
2	Solve x - 6 = 21.	**x = 27**
3	Solve 5x = 55.	**x = 11**
4	Solve x / 4 = 13.	**x = 52**
5	Solve x + 11 < 30.	**x < 19**
6	A square has a perimeter of 56 centimeters. Each side is x centimeters. Write and solve an equation for x.	**4x = 56; x = 14 centimeters**

PART 2 · APPLY IT

1. **6x = 48; x = 8 cards** Model the equal groups with 6x = 48. Divide both sides by 6 to find that each friend gets 8 cards.
2. **28 + x > 45; x > 17, so she must earn at least 18 points** Subtract 28 from both sides of 28 + x > 45 to get x > 17. Since game points are whole numbers, the least possible number is 18.

CHALLENGE

x < 12. The inequality sign reverses because dividing both sides by a negative number reverses the order.

Accept equivalent equation forms, such as 56 = 4x. For the inequality word problem, accept x > 17 and the contextual statement that Maya needs at least 18 whole points.