LESSON MAKER PRO

Solve It With x

Write equations and inequalities to model real situations.

GRADE 6 · 6.PAR.7.2

6.PAR.7.2 "Write one-step equations and inequalities to represent and solve problems; explain that a variable can represent an unknown number or any number in a specified set."

NAME _____ DATE _____

USE X TO REPRESENT A NUMBER

Use x for an unknown number or for numbers in a stated set. An equation shows two amounts are equal, and an inequality compares amounts. To solve, undo the operation on x and check that your result makes the statement true.

WORKED EXAMPLE

Solve: x + 13 = 29

1. x + 13 = 29
2. Subtract 13 from both sides.
3. x = 16
4. Check: 16 + 13 = 29

Answer: x = 16

PRACTICE 6 problems

1 Solve: x - 8 = 15

ANSWER _____

2 Solve: 6x = 42

ANSWER _____

3 Solve: x/5 = 9

ANSWER _____

4 Solve x + 6 >= 14. Graph the solution on the number line.



ANSWER _____

5 The inequality x > 11 describes x. If x is a whole number from 0 through 20, list all possible values of x.

ANSWER _____

6 Let x be a number. Write and solve an equation: A number divided by 4 is 7.

ANSWER _____

APPLY IT Show your work

1 The school gaming club wants at least 36 snack donations for its tournament. It already has 19 donations. Let x be the number of additional donations. Write and solve an inequality.

WORK SPACE

ANSWER _____

2 A student has saved $21 for a $48 pair of headphones. Let x be the number of dollars the student still needs to earn. Write and solve an equation.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Your phone has x photos. x is a whole number from 0 through 30. After you delete 9 photos, you want at least 14 photos left. Write and solve an inequality. Then explain why 30 is a solution and 22 is not.

WORK SPACE AND ANSWER

ANSWER KEY

Solve It With x

GRADE 6 · 6.PAR.7.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve: x - 8 = 15	**x = 23**
2	Solve: 6x = 42	**x = 7**
3	Solve: x/5 = 9	**x = 45**
4	Solve x + 6 >= 14. Graph the solution on the number line.	**x >= 8; place a closed dot at 8 and shade to the right.**
5	The inequality x > 11 describes x. If x is a whole number from 0 through 20, list all possible values of x.	**12, 13, 14, 15, 16, 17, 18, 19, 20**
6	Let x be a number. Write and solve an equation: A number divided by 4 is 7.	**x/4 = 7; x = 28**

PART 2 · APPLY IT

1. **x + 19 >= 36; x >= 17** Write x + 19 >= 36 because the total must be at least 36. Subtract 19 to find that the club needs at least 17 more donations.
2. **x + 21 = 48; x = 27** Write x + 21 = 48 because the saved amount plus the amount still needed equals the price. Subtract 21, so the student needs $27.

CHALLENGE

x - 9 >= 14; x >= 23. 30 is a solution because 30 - 9 = 21, and 21 >= 14. 22 is not a solution because 22 - 9 = 13, and 13 < 14.

Accept equivalent inequality forms and correct graphs with a closed dot at 8 and shading to the right. For whole-number contexts, accept a statement such as "17 or more donations" or "23 through 30" when the stated set is used.