LESSON MAKER PRO

Find the Unknown

Write and solve one-step equations

GRADE 6 · 6.AT.C.8.b

6.AT.C.8.b "Write and solve one-step equations of the form x + p = q, x − p = q, px = q and x/p = q for cases in which p, q and x are all nonnegative rational numbers."

NAME _____ DATE _____

UNDO THE OPERATION

To solve an equation, undo the operation on x. Do the same thing to both sides: subtract to undo addition, add to undo subtraction, divide to undo multiplication, or multiply to undo division.

WORKED EXAMPLE

Solve $x/11 = 3/5$.

1. Multiply both sides by 11.
2. $x = (3/5) \times 11$
3. $x = 33/5$

Answer: x = 33/5

PRACTICE 6 problems

1 Solve x + 2/5 = 9/10.

ANSWER _____

2 Solve x − 3/8 = 1/4.

ANSWER _____

3 Solve (2/3)x = 5/6.

ANSWER _____

4 Solve x/(3/4) = 2.

ANSWER _____

5 Solve x + 1.25 = 2.1.

ANSWER _____

6 Solve 0.6x = 1.8.

ANSWER _____

APPLY IT Show your work

1 An arcade game costs $1.75 to play. After one game, Maya has $4.50 left on her game card. Write an equation using x for the amount on her card before the game. Then solve it.

WORK SPACE

ANSWER _____

2 Four friends buy identical smoothies for $13.80 total. Write an equation using x for the cost of one smoothie. Then solve it.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student solves x/(7/10) = 6 by dividing 6 by 7/10. Explain the mistake. Find x and check your answer by substitution.

WORK SPACE AND ANSWER

ANSWER KEY

Find the Unknown

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve x + 2/5 = 9/10.	**x = 1/2**
2	Solve x − 3/8 = 1/4.	**x = 5/8**
3	Solve (2/3)x = 5/6.	**x = 5/4**
4	Solve x/(3/4) = 2.	**x = 3/2**
5	Solve x + 1.25 = 2.1.	**x = 0.85**
6	Solve 0.6x = 1.8.	**x = 3**

PART 2 · APPLY IT

1. **x − 1.75 = 4.50; x = $6.25** Add 1.75 to both sides of the equation.
2. **4x = 13.80; x = $3.45** Divide both sides by 4 to find the cost of one smoothie.

CHALLENGE

The student should multiply 6 by 7/10 because x is divided by 7/10. x = 21/5, and (21/5)/(7/10) = 6.

Accept equivalent fractions or decimals for numerical answers. For the challenge, accept any explanation that correctly undoes division by 7/10 and checks the solution.