

Equation Power

Use inverse operations to find x .

GRADE 6 • MA.6.AR.2

MA.6.AR.2 "Develop an understanding for solving equations and inequalities. Write and solve one-step equations in one variable."

NAME _____

DATE _____

UNDO THE OPERATION

An equation says two expressions have the same value. To solve for x , use the inverse operation to undo what is being done to x , and do the same thing to both sides.

WORKED EXAMPLE

$$7x = 56$$

1. Divide both sides by 7.

$$2. 7x / 7 = 56 / 7$$

$$3. x = 8$$

Answer: $x = 8$

PRACTICE 6 problems

1 $x + 18 = 35$

ANSWER _____

2 $x - 12 = 19$

ANSWER _____

3 $4x = 36$

ANSWER _____

4 $x / 6 = 8$

ANSWER _____

5 $52 = x - 11$

ANSWER _____

6 $5x = 45$

ANSWER _____

APPLY IT Show your work

- 1** Five identical game tokens cost \$40. Let x be the cost of one token. Write and solve an equation to find x .

WORK SPACE

ANSWER _____

- 2** A music playlist had x songs. After 15 songs were removed, 27 songs were left. Write and solve an equation to find x .

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Noah says that $x / 4 = 11$ means $x = 7$ because $11 - 4 = 7$. Explain Noah's error and solve the equation.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	$x + 18 = 35$	$x = 17$
2	$x - 12 = 19$	$x = 31$
3	$4x = 36$	$x = 9$
4	$x / 6 = 8$	$x = 48$
5	$52 = x - 11$	$x = 63$
6	$5x = 45$	$x = 9$

PART 2 • APPLY IT

1. **$x = 8$** Use $5x = 40$ because five tokens cost \$40. Divide both sides by 5 to get $x = 8$.
2. **$x = 42$** Use $x - 15 = 27$ because 15 songs were removed. Add 15 to both sides to get $x = 42$.

CHALLENGE

Noah should multiply 11 by 4, not subtract 4. $x = 44$.

Accept equivalent equation forms for the word problems, such as $40 = 5x$ and $27 = x - 15$. For the challenge, accept any clear explanation that division by 4 is undone by multiplying by 4.