

# Solve Multiplication and Division Equations

Lesson 7-3

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class: \_\_\_\_\_

## Key Vocabulary

Level 1 support

Picture first, then the word, then a plain-language meaning. Say each word out loud.

*Multiplication and division are inverses:  $3 \times 7 = 21$ ,  
so  $21 \div 3 = 7$*

### Inverse operation

Two math actions that undo each other, like  $\times$  and  $\div$ .

*$3 \times 7 = 21$  means 3 groups of 7 equals 21*

### Multiply

To add equal groups again and again.

*$36 \div 4 = 9$  means 36 split into 4 equal groups gives  
9 per group*

### Divide

To split into equal groups.

*$3x = 21 \rightarrow$  divide both sides by 3  $\rightarrow x = 7$  (x is alone)*

### Isolate

To get the letter by itself on one side.

## Key Ideas & Notes

- Detective Park discovered that 3 identical locked boxes contain a total of 21 pieces of evidence.
- She writes the equation  $3x = 21$  to find how many pieces are in each box.
- How can she solve for  $x$ ?
- Solve each equation by showing your work. Use inverse operations to isolate the variable.

### Think About It

- What does the 3 represent in the equation?
- What does  $x$  represent?
- What operation connects 3 and  $x$ ?

### My Notes

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## Guided Examples

### Example 1

**Solve:**  $6x = 42$

**Solution:** Divide both sides by 6:  $x = 42 \div 6 = 7$ . Check:  $6 \times 7 = 42$  ✓

**Answer:** A.  $x = 7$

### Example 2

**Solve:**  $n / 3 = 8$

**Solution:** Multiply both sides by 3:  $n = 8 \times 3 = 24$ . Check:  $24 / 3 = 8$  ✓

**Answer:** A.  $n = 24$

### Example 3

**Solve:**  $9m = 63$

**Solution:** Divide both sides by 9:  $m = 63 \div 9 = 7$ . Check:  $9 \times 7 = 63$  ✓

**Answer:** A.  $m = 7$

# Write About the Math

## The Writing Revolution

I can explain my steps using the words inverse operation, multiply, divide, and isolate.

### 1. Kernel Sentence subject + verb

**Model:** Inverse operation is two math actions that undo each other, like  $\times$  and  $\div$ .

*Operación inversa es dos operaciones que se deshacen entre sí, como  $\times$  y  $\div$ .*

**Write a kernel sentence about inverse operation. Use a subject and a verb.**

*Escribe una oración base sobre operación inversa. Usa un sujeto y un verbo.*

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### 2. Sentence Expansion because · but · so

**Kernel:** Inverse operation matters in math

*Operación inversa importa en matemáticas*

Expand the kernel three ways. Add a reason, a contrast, and a result.

**because**  
*porque*

**Inverse operation matters in math because \_\_\_\_.**

*Operación inversa importa en matemáticas porque \_\_\_\_.*

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**but**  
*pero*

**Inverse operation matters in math, but \_\_\_\_.**

*Operación inversa importa en matemáticas, pero \_\_\_\_.*

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**so**  
*entonces*

**Inverse operation matters in math, so \_\_\_\_.**

*Operación inversa importa en matemáticas, entonces \_\_\_\_.*

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### 3. Sentence Types 4 ways to write a math idea

**Statement**  
*Afirmación*

Tell one true fact about inverse operation.  
*Di un hecho verdadero sobre inverse operation.*

**Inverse operation** \_\_\_\_.

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**Question**  
*Pregunta*

Ask a question about inverse operation.  
*Haz una pregunta sobre inverse operation.*

**How does** \_\_\_\_ ?

*¿Cómo* \_\_\_\_ ?

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**Exclamation**  
*Exclamación*

Show excitement about inverse operation.  
*Muestra entusiasmo sobre inverse operation.*

**Wow,** \_\_\_\_ !

*¡Guau,* \_\_\_\_ !

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**Command**  
*Mandato*

Tell a partner what to do with inverse operation.  
*Dile a un compañero qué hacer con inverse operation.*

**First,** \_\_\_\_ .

*Primero,* \_\_\_\_ .

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### 4. Explain Your Reasoning use a sentence starter

**I divided / multiplied both sides by** \_\_\_\_ .

*Dividí / multipliqué ambos lados por* \_\_\_\_ .

**The answer is** \_\_\_\_ **because** \_\_\_\_ .

*La respuesta es* \_\_\_\_ *porque* \_\_\_\_ .

**I would use this to** \_\_\_\_ .

*Usaría esto para* \_\_\_\_ .

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## Try It

Solve on your own. Check the answer key when you are done.

**1. Solve:  $y / 7 = 5$**

A.  $y = 35$

B.  $y = 12$

C.  $y = 2$

D.  $y = 7$

Show your work:

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**2. A detective splits 54 clues equally among 9 case files. The equation  $9c = 54$  represents this. What is  $c$ ?**

A.  $c = 6$

B.  $c = 63$

C.  $c = 45$

D.  $c = 9$

Show your work:

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## Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

**A bakery packed muffins into boxes of 8. They made 96 muffins total. Write an equation, solve it, and explain why your answer is reasonable. Then write a different situation that uses division and has the same answer.**

*Sentence starter: Equation: \_\_\_\_ . Solving: \_\_\_\_ . The answer \_\_\_\_ is reasonable because \_\_\_\_ . A division situation with the same answer: \_\_\_\_ .*

Show your work:

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## Reflect — Exit Ticket

**Solve:  $w / 8 = 6$**

- A.  $w = 48$
- B.  $w = 14$
- C.  $w = 0.75$
- D.  $w = 2$

Your answer:

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## Answer Key & Teacher Guide

1. **Try It 1:** A.  $y = 35$  — *Multiply both sides by 7:  $y = 5 \times 7 = 35$ . Check:  $35 / 7 = 5$  ✓*
2. **Try It 2:** A.  $c = 6$  — *Divide both sides by 9:  $c = 54 \div 9 = 6$  clues per file.*
3. **Exit Ticket:** A.  $w = 48$  — *Multiply both sides by 8:  $w = 6 \times 8 = 48$ . Check:  $48 / 8 = 6$  ✓*

### Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Inverse operation is two math actions that undo each other, like  $\times$  and  $\div$ .
- **Expansion:** *because* gives a reason, *but* shows a contrast or exception, *so* shows a result. Answers vary; each must keep the kernel idea and add the correct kind of detail.
- **Sentence types:** Statement ends with a period, question with "?", exclamation with "!", and a command starts with an action verb (a "bossy" verb).