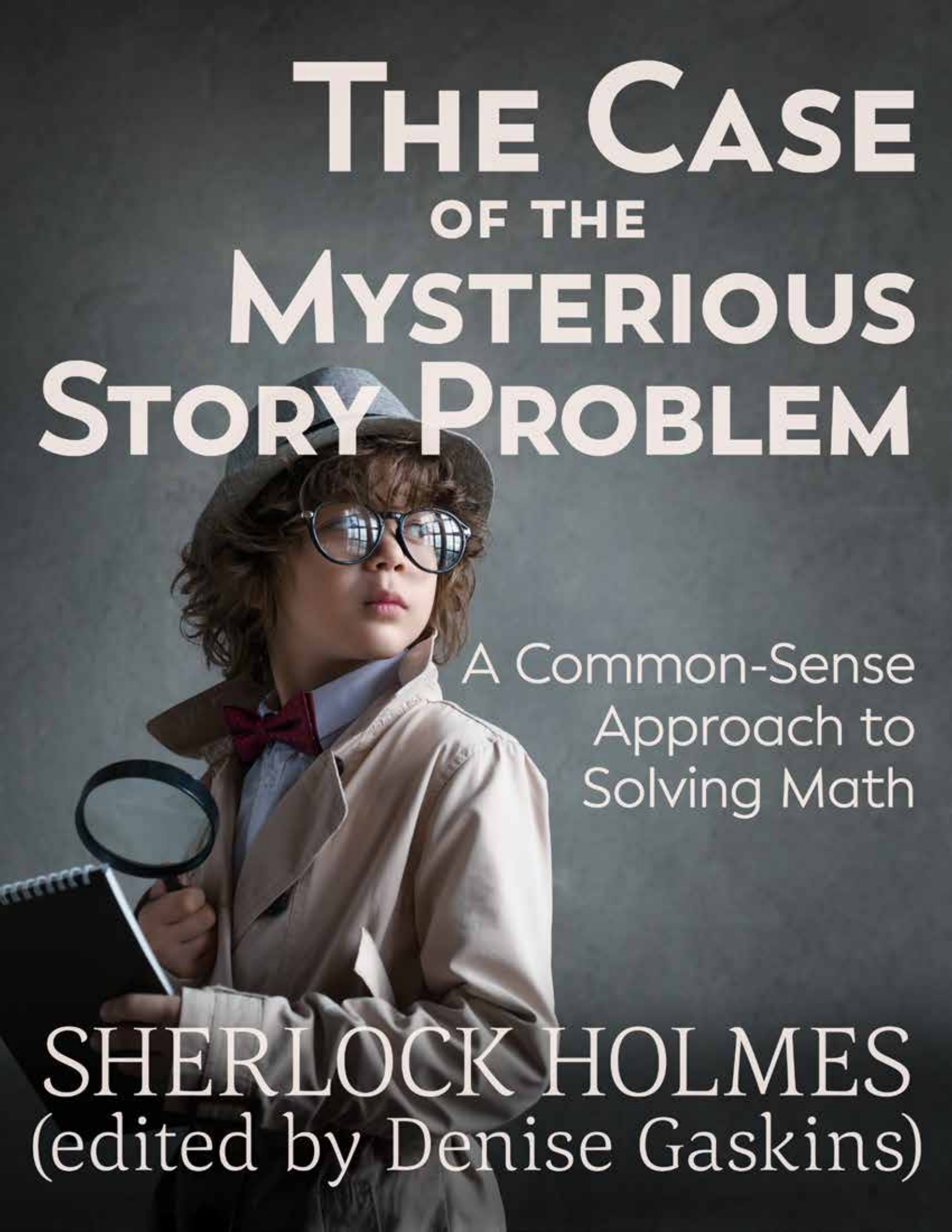


THE CASE OF THE MYSTERIOUS STORY PROBLEM

A young boy with curly brown hair, wearing a grey fedora, round glasses, a white shirt, a red bow tie, and a tan trench coat, is looking off to the side. He is holding a black magnifying glass in his right hand and a black spiral notebook in his left hand. The background is a plain, light-colored wall.

A Common-Sense
Approach to
Solving Math

SHERLOCK HOLMES
(edited by Denise Gaskins)

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The Case of the Mysterious Story Problem: A Common-Sense Approach to Solving Math (a lost manuscript by Sherlock Holmes)

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I've spent the last two days going over my problem,
going over my approach, finding new gaps in my proof, fixing them ...
wash, rinse, repeat.

It's amazing that this vision of math
as "getting to the right answer on your first try"
even exists.

I have to make, unmake, remake
so many mistakes
to get where I'm going.

I think all mathematicians work that way.

Math doesn't happen in a straight line.
If I hadn't made as many mistakes
in my thinking about this problem,
I don't think I would have solved it.

Somehow, a big part of the experience of math is trouble.
Frustration is the status quo.

But when you get something—the thrill!

—Dan Finkel,
creator of the
Prime Climb board game



The Case of the Mysterious Story Problem

by Sherlock Holmes

Back in my student days, I loved story problems. As a detective, I enjoy sifting out clues, uncovering hidden facts, solving the mystery.

But what do you do when you come across a real stumper, when a problem has you stymied, and you feel like you'll never be good at math?

You don't have to bake a pie to understand fractions or jump off a cliff to learn about gravity. Use your imagination instead.

Ask the following four questions to kickstart your reasoning skills...

Question #1: What Do You Know?

The first step in solving any problem is to visualize the story behind it. That can be hard, because the story is not something you can touch—it's an idea. But ideas are real and important parts of our world.

Read the problem. Read it again. Close your eyes and see the story in your mind. Can you describe the situation in your own words? Now open your eyes and make a list of everything in the problem. What do you know?

Notice math vocabulary words like *factor*, *multiple*, *area*, or *perimeter*. What do you remember about those topics?

Be careful not to scramble units. If one length is given in inches and another is given in yards, make them consistent. Try to express the facts in math symbols or using the visual algebra of a bar model diagram.

Question #2: What Do You Want?

Before you can find a solution, you need to know clearly what it is you're after. Describe the goal, what the problem is asking for. What will your answer look like?

Notice important words like *sum*, *product*, *next*, or *not*. The small word "not" is especially easy to miss. Try to express the goal in math symbols or using the visual algebra of a bar model diagram.

(1) What
do I know?

(2) What
do I
want?

(3) What
can I do?

(4) Does
it make
sense?



Be A Math Detective



Math Games, Tips, and Activity Ideas for Families.

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—Denise Gaskins

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