

# THE HARDEST MATH PROBLEM

## STUDENT CONTEST

Congrats on making it to the final round of the contest! Ready to show off your math and writing skills? You could win a laptop, plus \$5,000 for college!

Use the Challenge 2 Question Sheet to answer the story problem for your grade.

**Want an extra challenge?** You can also answer the problem for any grade level *above* you!



**I'm Currently in Grade**

- 5    6    7    8

**I Answered the Question for Grade(s)**

- 6    7    8

**My Answer(s)**

Grade 6 Problem: \_\_\_\_\_

Grade 7 Problem: \_\_\_\_\_

Grade 8 Problem: \_\_\_\_\_

**My Reasoning** Use a separate sheet of paper to explain how you arrived at your answer(s). Write your answer(s) as though you are explaining it to someone who does not understand very much about math. Be clear, detailed, and precise. Be sure to write neatly, or type your answer!

### CONTACT INFORMATION

Student's First Name \_\_\_\_\_ School Phone \_\_\_\_\_

Student's Last Name \_\_\_\_\_ School Name \_\_\_\_\_

Grade \_\_\_\_\_ School Address \_\_\_\_\_

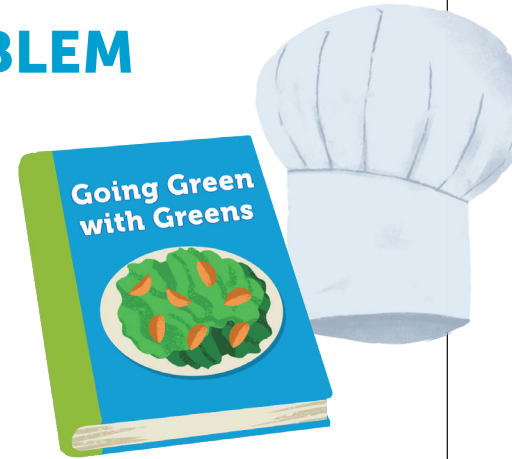
Teacher's Name \_\_\_\_\_ City \_\_\_\_\_

Teacher's Email \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

NO PURCHASE NECESSARY. 50 US states and DC. Entries must be submitted by the student's teacher, 18+. Teachers submit entries online: [scholastic.com/hardestmathcontest](http://scholastic.com/hardestmathcontest). Teachers submit entries by mail: Scholastic Inc., The Hardest Math Contest, ATTN: SNP, Space 3-226, 557 Broadway, New York, NY 10012. Challenge 1: Open to grs. 5-8 students. Students may enter by answering the question at or above their current grade level, limit one entry per grade problem. Entry period: 12:01 a.m. ET on 9/23/19 to 11:59 p.m. ET on 12/2/19. Mailed entries: postmarked by 12/2/19, and rec'd by 12/16/19. Three teachers who submit at least three eligible student entries (except as set forth in official rules) will each receive a \$500 gift card. Challenge 2: Open to grs. 5-8 students who answered correctly in Challenge 1. Teachers of eligible students will be notified on or around 1/6/20. Students may answer the question at or above their current grade level, limit one entry per grade level. Entry period: 12:01 a.m. ET on 1/6/20 to 11:59 p.m. ET on 2/28/20. Mailed entries: postmarked by 2/28/20, and rec'd by 3/13/20. Three (3) Grand Prize Winning students, one from each of sixth, seventh, and eighth grade problems, will each receive a laptop computer with Microsoft Office Home and Student Office products (ARV \$550) and a \$5,000 contribution to a 529 plan (a college savings account) (ARV \$5,000). The three teachers who submitted the entries of the Grand Prize Winners will each receive a \$500 American Express gift card for classroom use (ARV \$500). Three (3) Runner-Up winning students, one from each of sixth, seventh, and eighth grade problems, will each receive a tablet computer, which does not include a data plan (ARV \$125). Official Rules: [scholastic.com/hardestmathcontest/rules](http://scholastic.com/hardestmathcontest/rules). Void where prohibited.

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## STUDENT CONTEST



Celebrity chef Carlita Kahn's new environmentally responsible cookbook, *Going Green With Greens*, is expected to be a runaway best seller! Solve these problems and help Carlita and her publisher figure out some of the book launch logistics!

### Helpful Hints:

Profit = Sales – Expenses

Slope/Intercept Formula:  $y = mx + b$

## GRADE 6

On the popular cooking show *Cookbook Crunch*, the host picks a random recipe from a cookbook and the author has to feed the 63-member studio audience in one hour! The host selects this recipe for Carlita:

### Spicy Spinach and Apricots (Feeds 6)

#### Ingredients:

- 1/2 kilogram spinach
- 1/4 kilogram apricots
- 1/5 kilogram jalapeno pastry
- 1/10 kilogram pine nuts
- Salt, pepper, and hot sauce

Bake at 350° in a medium loaf pan for 45 minutes.

Carlita only finds a hundred small, 175-gram loaf pans. If cooking time is proportional to the amount of mixture and if the oven holds 9 of these pans at once, **how much time will be left in the show when Carlita pulls the last batch out of the oven?** (Assume the time to mix ingredients, remove a batch from the oven, and put in the next one is insignificant.)

## GRADE 7

The publisher will sell Carlita's book to bookstores for \$26.40 per copy. The retail price for customers to pay will be \$48. Carlita expects to sell 225,000 copies. The publisher's expenses will be:

- Printing: **\$3.75 per copy**
- Editing/Design: **\$27,500**
- Publicity/Advertising/Administrative: **\$135,150**
- Carlita's Author Fee: **6.5%** of the suggested retail price of every book sold

Carlita suddenly announces that she wants to insert a kelp bookmark in each copy. The publisher thinks this will guarantee sales, but Carlita must agree to pay for 1/3 of the cost of the kelp. If the publisher expects the total profit on the book with the added expense to be \$4,092,100, **how much should Carlita expect to pay for her share of the kelp?**

## GRADE 8

Carlita will visit 14 cities in 14 days. She will have a book signing and cooking demonstration in each city, then travel overnight to the next city. The distance between each city averages 240 miles.

The publisher will rent a solar powered RV camper, with a weekly rental fee plus a per-mile charge. The rental company hasn't prepared the final estimate, but showed the publisher two recent invoices for one-week rentals. One was \$1,188.15 for a 540 mile trip. The other was \$1,310.55 for an 880 mile trip. Carlita will pick up the camper in the first city on the tour and leave it in the last.

The other tour costs are:

- Cooking demonstration production: **\$3,450 each**
- Book signing materials: **\$1,475 total**

**How much should the publisher budget for total tour expenses?**