

## Sample questions from the AMC 8

2. On average, for every 4 sports cars sold at the local car dealership, 7 sedans are sold. The dealership predicts that it will sell 28 sports cars next month. How many sedans does it expect to sell?  
(A) 7 (B) 32 (C) 35 (D) 49 (E) 112
5. Alice needs to replace a light bulb located 10 centimeters below the ceiling in her kitchen. The ceiling is 2.4 meters above the floor. Alice is 1.5 meters tall and can reach 46 centimeters above the top of her head. Standing on a stool, she can just reach the light bulb. What is the height of the stool, in centimeters?  
(A) 32 (B) 34 (C) 36 (D) 38 (E) 40
6. Which of the following figures has the greatest number of lines of symmetry?  
(A) equilateral triangle (B) non-square rhombus  
(C) non-square rectangle (D) isosceles trapezoid (E) square
8. The length of a rectangle is increased by 10% and the width is decreased by 10%. What percent of the old area is the new area?  
(A) 90 (B) 99 (C) 100 (D) 101 (E) 110
22. How many whole numbers between 1 and 1000 do **not** contain the digit 1?  
(A) 512 (B) 648 (C) 720 (D) 728 (E) 800
24. What is the correct ordering of the three numbers  $10^8$ ,  $5^{12}$ , and  $2^{24}$ ?  
(A)  $2^{24} < 10^8 < 5^{12}$  (B)  $2^{24} < 5^{12} < 10^8$  (C)  $5^{12} < 2^{24} < 10^8$   
(D)  $10^8 < 5^{12} < 2^{24}$  (E)  $10^8 < 2^{24} < 5^{12}$



Answers: 2) D 22) D 24) A

## American Mathematics Competitions

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### Contributors

Academy of Applied Sciences, American Mathematical Association of Two-Year Colleges, American Mathematical Society, American Statistical Association, Art of Problem Solving, Awesome Math, Canada/USA Mathcamp, Casualty Actuarial Society, D.E. Shaw & Co., IDEA Math, Institute for Operations Research and the Management Sciences, Jane Street, MathPath, Math Zoom Academy, Mu Alpha Theta, National Council of Teachers of Mathematics, Pi Mu Epsilon, Society of Actuaries, USA Math Talent Search, W.H. Freeman and Company



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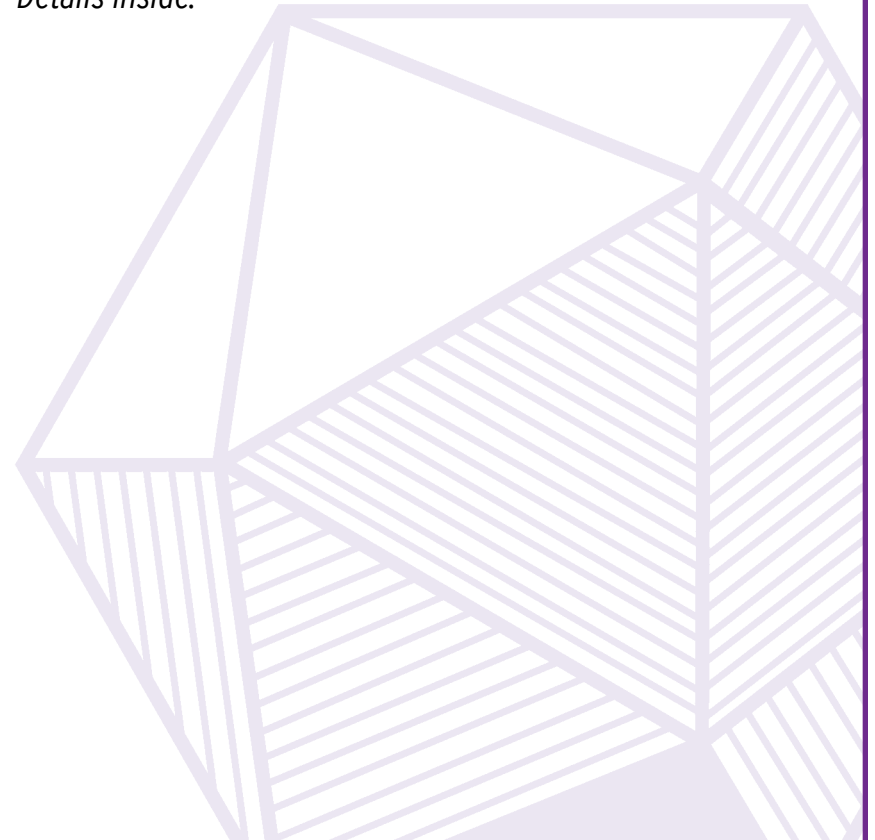
# MAA

MATHEMATICAL ASSOCIATION OF AMERICA

## American Mathematics Competitions 8

Register now for the middle school level AMC 8  
held in November of each year!

Details inside.



## What is the American Mathematics Competitions 8?

Thank you for your interest in the middle school level AMC 8 contest! For over 60 years the AMC math contests have been the most respected school-based competitions in the nation. The AMC works with teachers, mathematicians, and professional organizations to provide high quality, challenging math problems aligned with curriculum standards. Many well-known colleges and universities request scores from our contests at the higher grade levels and use them for recruiting and admissions.

The material covered on the AMC 8 is the middle school mathematics curriculum. Topics include probability, estimation, percentages, spatial visualization, everyday applications and reading and interpreting graphs. The AMC 8 contest is for students in the sixth through eighth grade, although accelerated fourth and fifth graders can also take part. AMC 8 eligibility extends to any student 14.5 years of age or younger, and not enrolled in grades 9 through 12. It is 25 questions in length, and is multiple choice with no penalty for guessing. The contest takes only 40 minutes. A student's score is the number of problems correctly solved.

The American Mathematics Competitions 8 is only the beginning. There are high school-level contests offered for grade 10 and below, as well as grade 12 and below. The AMC 10 and the AMC 12 contests are the first in the series that lead to the USA Team at the International Mathematical Olympiad. Encourage your students to reach for the stars!

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## School and student awards for the AMC 8

Each participating school receives individual school results, school awards, and high scorers are listed on our website. An award plaque is given to all the perfect scorers, the top scoring student(s) in each state, and student awards are provided for other achievements. Please visit [amc.maa.org](http://amc.maa.org) for more details.

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## Administration of the AMC 8

Our contests are administered by a school or school-based organization and offer individual and school recognition for high scorers. The AMC 8 will be given in participating schools on the same date during the middle of November (please visit our website for specific dates). Administration on a later date is permitted in cases of academic conflicts or school closings. The contest is only 40 minutes in length, making it easily administered within a class period. Students may not use calculators on the contest. To make the scoring official, we score all the contests in the AMC office. For more information about how to involve your school in the competitions, read the Frequently Asked Questions at [amc.maa.org](http://amc.maa.org). *Spanish, braille and large print editions are also available.*

## Our Purpose

The mission of the MAA Competitions is to increase interest in mathematics and to develop problem solving through a fun competition. Students gain the opportunity to learn and achieve through competition with students in their school and from around the world. Teachers and schools benefit from the chance to challenge students with interesting mathematical questions that are aligned with curriculum standards at all levels of difficulty.

## What are people saying about the AMC?

"Our students look forward to competing in up to 20 different math contests each year, and the American Mathematics Competitions are the contests that the students strive to take every year. They generate great discussions and are a joy of the participating students."  
-*Mathematics Department Head, Michigan*

"We are thankful for the American Mathematics Competitions because it gives our students the opportunity to compete with other students who have the same passion for mathematics that they do." -*Mathematics Department Chair, Virginia*

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## Math Club Package

For an additional charge you can order an AMC 8 Math Club Package, which includes a Club Advisor's Handbook (with a new set of problem worksheets taken from the AMC archives), plus a CD with all the contests given from 2001 through the most recent year, including the AMC 8, 10, and 12, the American Invitational Mathematics Examination (AIME), and the United States of America Mathematical Olympiad (USAMO).

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## Edyth May Sliffe Teaching Award

The Sliffe Award is given each year to approximately fifty teachers from high-scoring AMC 8 schools. Winners of this award receive a recognition certificate, an award pin, \$100, a one-year membership to the Mathematical Association of America. A special reception during the NCTM spring meeting honors the award winners.