

## UT PRO2SERVE MATH CONTEST QUESTIONS AND ANSWERS FOR REGISTRANTS

### *Q: What is the most important information for me to know?*

**A:** To fit a contest of this magnitude into a single day, we must keep strictly on schedule. Although we would prefer to give tardy participants a little extra time to show up, the demands of the day compel us to enforce posted times ruthlessly. Participants arriving late for competitions can expect to forfeit their chance to compete.

### *Q: What if I need accommodations for a disability or other special circumstance?*

**A:** Please call the mathematics department at (865) 974-2461 as soon as possible and explain the situation. We will try to provide appropriate assistance.

### *Q: May my school bring more people than we registered?*

**A:** No. Because the numbers of exams and lunches and the size of our meeting facilities are tailored to the number of registrants, please do not bring additional people, whether students, teachers, or chaperones.

### *Q: If we bring fewer people than my school registered, may we get a refund?*

**A:** No. We are sorry, but registration fees are not refundable.

### *Q: How do I reach campus by car?*

**A:** Generally speaking, take the 17<sup>th</sup> Street/University of Tennessee exit (exit 387) off I-40 or the Kingston Pike exit off Alcoa Highway. If you are coming from the north, take the I-275 spur to I-40 in the middle of Knoxville and take the first exit on I-40 westbound. Routes to the university are generally well marked. See the enclosed map and the sheet on directions for further information. There is a great deal of construction in the areas near campus. Long delays are possible. Give yourself extra time, just in case.

### *Q: Where can I get breakfast?*

**A:** Several fast food establishments and one or two restaurants on Cumberland Avenue (adjacent to campus) serve breakfast. Breakfast can also be purchased at Smokey's Palace in the University Center, adjoining the parking garage (see below). A light brunch will be available to teachers and chaperones at the Teachers Reception in the UC Auditorium at 9:00 AM.

### *Q: Where should I park?*

**A:** See the attached sheet on directions and parking. Please note that there are security measures for the parking and unloading of buses and large vans detailed on the sheet.

### *Q: How much does parking cost?*

**A:** Parking is included in your registration fee. Take the ticket issued by the parking garage and bring it to check-in. We will stamp it there, instructing Parking Services to charge the Mathematics Department. This will allow you to leave the garage without paying.

### *Q: What time should I arrive? Where do I go first?*

**A:** You need to check in at Cox Auditorium between 7:30 and 8:00 AM, so you should arrive on campus before 7:30 AM. From the University Center parking garage, allow fifteen minutes to get to Cox Auditorium. The enclosed map will help you find it.

### *Q: How should I dress?*

**A:** You will make two or three fifteen-minute outdoor walks between sites, so dress appropriately for the temperature and weather. Umbrellas will be useful if rain threatens. Otherwise, simply make yourself comfortable.

***Q: How do I check in?***

**A:** Each school or home school should designate one person to pick up all the check-in materials. If you are that person, go to the check-in desk at the Cox Auditorium. One of our friendly staff will get some information from you and give you a check-in packet with materials for your whole group. Please distribute the check-in materials to the other teachers, parents, and students from your school. If you are not that person, please find out who that person is for your school or home school, and make sure you get everything you need from the check-in packet.

***Q: How much money should I bring?***

**A:** You should not need money for the contest itself. Your registration fees should already be in our hands. All activities for the day (including parking and lunch) are included in the registration fee.

***Q: When does everything happen?***

**A:** We have enclosed a schedule for the day in this information packet. Minor changes are possible, so you will receive a final schedule in your check-in packet.

***Q: What are the main events of the contest?***

**A:** The main events are three competitions: FERMAT I, FERMAT II, and the Math Bowl.

***Q: May I use a calculator?***

**A: No calculators are allowed!**

***Q: What is FERMAT I?***

**A:** FERMAT I is a multiple-choice written examination in mathematics. It consists of twenty-five questions, each of which has five answers to choose from. It is the qualifying exam for FERMAT II.

***Q: Who takes FERMAT I?***

**A:** Every student at the contest is welcome and expected to take FERMAT I. The check-in packet contains an information sheet for each student registered from your school or home school. Please fill out these information sheets prior to 8:30 AM. These sheets serve as the admission ticket to the FERMAT I examination.

***Q: How is FERMAT I graded? How is my score calculated?***

**A:** FERMAT I is graded by computer. You receive three points for every correct answer and lose one point for every incorrect answer. You score zero points for each answer left blank.

***Q: Is it to my advantage to guess on FERMAT I?***

**A:** As with all mathematics the only true advantage comes from understanding the subject. That being said, if you guess wildly from the five available answers, you will lose points on average. If you eliminate one wrong answer and guess wildly from the remaining four, you will neither lose nor gain points on average. If you eliminate two or more wrong answers and guess wildly from those that remain, you will gain points on average. Your actual results, of course, will depend on whether you guess correctly or incorrectly.

***Q: What awards do top performers on FERMAT I receive?***

**A:** Every student participating in the contest receives a certificate. The top fifty scorers on FERMAT I qualify to take FERMAT II and compete for scholarships to UT. The top five scorers on FERMAT I receive plaques honoring their achievement.

***Q: What is FERMAT II?***

**A:** FERMAT II is an eight-question, free-response examination in mathematics.

***Q: Who takes FERMAT II?***

**A:** Only the students with the top fifty scores on FERMAT I qualify to take FERMAT II.

***Q: How do I find out whether I get to take FERMAT II?***

**A:** We will meet in the University Center Auditorium at 11:00 AM to announce the names of the top fifty scorers on FERMAT I.

***Q: How is FERMAT II graded?***

**A:** Faculty and graduate students of the UT Mathematics Department grade the exams by hand.

***Q: What awards do top performers on FERMAT II receive?***

**A:** Every student taking FERMAT II receives a special certificate to honor this achievement. The top ten scorers on FERMAT II receive plaques and scholarships of \$4000 per year for four years to UT.

***Q: What is the Math Bowl?***

**A:** The Math Bowl is a competition in the style of the old GE College Bowl competitions. Sixty-four high school three-member teams compete in a double elimination tournament. Teams compete head-to-head to be the fastest to answer ten math questions correctly and in the correct form. For more information, see our Web page at <http://www.math.utk.edu/TMC/mathbowl/>. Please note, in particular, that the Math Bowl has strict rules on the form in which answers are stated. Those rules are posted at the Web site above. Answers given in incorrect form will be wrong in the Math Bowl, even if they are mathematically correct. If you are competing in the Math Bowl, you should prepare accordingly.

***Q: How are the Math Bowl tournament brackets constructed? How are teams assigned their initial positions?***

**A:** We custom-build brackets to make it possible to finish the Math Bowl in a single day. As in any double elimination tournament, losing two matches eliminates a team. Initial assignment of teams to positions in the bracket is random.

***Q: What are the prizes in the Math Bowl?***

**A:** For purposes of awards, high schools are divided into two classes according to size, though all schools compete together. We award trophies for first and second place overall and for first and second place among smaller schools. Members of the winning teams receive medallions. The winning teams also receive unlimited bragging rights (until next year).

***Q: Is the Math Bowl a serious mathematical examination?***

**A:** No, the Math Bowl is meant to be fun. It is a mathematical sporting event rather than a deep test of mathematical knowledge. This is why it has time limits and judges with whom argument is not permitted. The point is to have an enjoyable, fast competition around a topic (mathematics) that we all appreciate.

***Q: What are the lunch arrangements?***

**A:** Your registration fee includes a boxed lunch and drink. Lunch will be served in the University Center ballroom from 11:45 AM to 1:00 PM.

***Q: How do we get the lunches?***

**A:** Your check-in packet contains a lunch ticket for everyone who paid a registration fee (students, parents, teachers, and chaperones). You will exchange your ticket for lunch in the ballroom. Please have your lunch ticket with you when you meet in the UC Auditorium at 11AM. Chaperones have these tickets in their check-in packet.

***Q: What can we do during times when we are not taking exams or competing in a math bowl?***

**A:** During periods of time when students are not participating in a contest exam or math bowl, we have several activities available for participants at the University Center (UC). The game room in the UC basement, "Down Under", will be available for the exclusive use of contest participants, free of charge, from 11:45 - 2:00 PM. Several activities are available, including billiards (12:30 - 2:00 PM only). We ask that students be accompanied by an adult chaperone when using the facility. Campus tours may also be available 12:30-2:00 PM. We encourage chaperones to sign up for the tours at headquarters in the UC Ballroom to better accommodate large groups. We hope to have interesting mathematical puzzles, games, and displays as well as information on majors and careers in the mathematical sciences. Please see the enclosed schedule for more information.

***Q: When and where will the awards be presented?***

**A:** We will present all awards at a ceremony in the University Center Auditorium immediately following the final round of the Math Bowl. All participants who wish to attend the awards ceremony are asked to arrive promptly at the auditorium by 3:30 pm to watch the final rounds of the math bowl. This will allow us to finish the contest in a timely manner. We expect to begin the awards ceremony near 4:00 PM.

***Q: When will we be done for the day?***

**A:** The University of Tennessee Pro2Serve Math Contest ends with the presentation of awards. This should finish no later than 4:30 PM.

***Q: How did this contest come to be? Who sponsors it?***

**A:** The University of Tennessee Pro2Serve Math Contest is sponsored by The University of Tennessee Department of Mathematics and Pro2Serve Professional Project Services Inc. Pro2Serve is an East Tennessee firm that provides specialized services to fast-growing companies. Based in Oak Ridge, Pro2Serve funds help to provide travel expenses for high school competitors who must travel more than 100 miles to get to the competition. UT funds the scholarships.

***Q: I have questions that are not answered here. How can I find out more?***

**A:** The University of Tennessee Pro2Serve Math Contest Web page is at <http://www.math.utk.edu/TMC/>. If that does not help, please address your questions and concerns to Toni Meador in the UT Department of Mathematics. You can reach her by phone at (865) 974-2461, by e-mail at [tmc@math.utk.edu](mailto:tmc@math.utk.edu) or by mail at University of Tennessee Pro2Serve Math Contest; Department of Mathematics; 121 Ayres Hall; Knoxville, TN 37996-1300. On the day of the contest, the help and information center will be the contest headquarters in the University Center ballroom.