Math League News

■ Our Calculator Rule Our contests allow both the TI-89 and HP-48. You may use any calculator without a QWERTY keyboard.

■ Use the Internet to View Scores or Send Comments Just go to http://www.mathleague.com and look around!

■ Upcoming Contest Dates & Rescheduling Contests Contest dates (and alternates), all Tues., are Feb. 14 (Feb. 7), Mar. 14 (Mar. 7), Apr. 11 (Apr. 4). If **vacations, school closings or special testing days**) interfere, give the contest on another date. Attach a brief explanation, or the scores may be considered unofficial. We sponsor contests for *Algebra Course I Contest* and for grades 4, 5, 6, 7, 8. See *www.mathleague.com* for more information.

■ 2006-2007 Contest Dates Next year's contest dates (and alternate dates), all Tuesdays, are: Oct. 24 (17), Nov. 28 (21), Jan. 9 (2), Feb. 6 (Jan 31), Mar. 6 (Feb. 27), Apr. 10 (3). If you have a conflict (such as the AMC or scheduled statewide testing), it's a good idea to put the alternate date on your calendar now.

■ Student Cumulative Scores Although completion of the Cumulative Column is optional, *we list (and consider official) only cumulative scores reported in this column.* A student whose cumulative scores are incorrect (or don't appear regularly in the **Cumulative Column**) may lose eligibility for recognition by the League.

■ T-Shirts Anyone? We're often asked "Are T-shirts available? The logo lets us know fellow competitors." Featuring grey shirting and a small, dark blue logo in the "alligator region," we have MATH T-shirts in all sizes at a **very** low price. There's one low shipping charge per order, regardless of order size. You may use Amex, VISA, MasterCard, or Discover. To order, use our Web site, www.mathleague.com or you may phone your order to 1-201-568-6328; or fax your purchase order to 1-201-816-0125.

■ Comments About #2-4 and #2-6: Joseph Laurendi disagreed with our ruling on #2-4. He agreed that 0 is a perfect square, but said "students who got 17 obviously knew the math." Jen Chen wrote "to praise you guys for [2-6]. It's really amazing how the question involves such elementary algebra but great logic to solve!"

■ General Comments About Contest #3: Michael Buonviri said "Thanks for a fun contest. Our group enjoyed this one a lot. After many years of waiting, we finally scored another 6." Kay Castner's students "really enjoyed these questions and spent a great deal of time discussing their solution methods." Bob Smith thought it was "a nice set of questions where all students could achieve some success but were challenged as well." Tyler Somer said "Thanks for another good contest." Jason Rupp said "Thanks for another great contest."

■ Problem 3-3: Comments Tyler Somer said "I love tetrahedral numbers. My students used Pascal's triangle to determine the required tetrahedral number." Zach Ahlers used this idea. He added the diagonals to get $1\times 11 + 2\times 10 + \ldots + 10\times 2 + 11\times 1$.

■ Problem 3-4: Comments John Burnette said "Nice contest, but why redefine *pseudoprime*? The word has a perfectly good definition already." Oops. Two appeals claimed that since 2 is a prime, it cannot also be a pseudoprime. There is no basis for that claim, since we defined pseudoprime. The appeal was denied.

■ Problem 3-5: Alternate Solutions Ken Thwang had another method. "Tangents to a circle from a point are congruent. The top portion of the 15 side is 12, so the bottom portion is 3. From the triangle's bottom left vertex, the tangent's length is 3, the secant's length is 9, and the length of the secant's external segment is x. Since $3^2 = 9x$, $x = 1$, $d = 8$, and $r = 4$." G Magid's students "used inverse tangents, the Pythagorean theorem, and the angle bisector theorem. Good question!" Jason Rupp noted that, since the segment drawn to the center is an angle bisector of an angle whose sine is 9/15, $r = 12 \tan(\frac{1}{2} \arcsin \frac{9}{15})$.

■ Problem 3-6: Calculator Sol & An Appeal (Accepted) Bob Smith called 3-6 "a creative solution you can see by using smaller numbers in an expression of the same form." Duane Miller's students just learned how to use the calculator to do the sequences and sums. They used the sequence function." David Anstey said that, on a TI 86, you can just enter the following: "SUM SEQ(log$x$ / (log(2006$x-x^2$)), x, 1, 2005). There were two appeals for 1003, which is the exact answer rounded to 4 significant digits. Thus, 1003 should receive full credit. Dave Mecham said you can use the TI-83's TABLE function to notice that $f(1)+f(2005) = 1$, etc. He noted that this problem was accessible to students who did not yet understand logarithms!

Statistics / Contest #3

Prob #, % Correct (top 5 each school)

3-1	97%	3-4	48%
3-2	86%	3-5	79%
3-3	70%	3-6	40%