An optimization problem: Given two sets A and B, the symmetric difference $A\Delta B$ is defined by the union of $A\backslash B$ and $B\backslash A$. Show that $A_1\Delta A_{2\ldots}\Delta A_n$ contains exactly the elements belonging to an odd numbers of the A_i, $1\leq i\leq n$.

- Please **Submit** your solution to
  - *Dr. Tirtha Timsina,* ttimsina@gsu.edu or
  - *Dr. Christian Avart,* cavart@gsu.edu

  before the deadline: **Tuesday, October 30th, 7:00PM.**
- The WINNER will be awarded with a $15 gift certificate and will be announced in the NEXT issue.

Problem of the last month: Inside an equilateral triangle, what is/are the point(s) minimizing the sum of the distances to each of the three sides?

Consider x, any point inside the equilateral triangle T. Assume d is the length of the sides of T and let a,b and c be the distances from x to each of the three sides of T. The sum of the area of the three triangles having the sides of T for base and the point x as one the their corners is $\frac{1}{2}(a+b+c)d$, which must be equal to A, the area of T. Consequently, $a+b+c=2A/d$, which is independent of x. In other words, all the points inside the triangles yield the same sum of distances to each of the three sides.

Winner: Joseph Moravitz
