

Rockhurst University Mathematics Problem of the Month

Congratulations to Nicholas Brubaker and Kevin Cervený, winners of February's contest. Each wins a prize from the POM puzzle collection. Honorary mention goes to Kristina Carpenter, Francis Dailey, Kaleb Waite, and Peter Simone. The contest is open to any currently enrolled Rockhurst student. The winner will be chosen according to who has the best solution (not just answer) to the problem. Ties will be resolved by considering the order in which the solutions were received.

Solutions should be submitted to Keith Brandt (Richardson 120) by the end of the month. Winners receive wonderful prizes, so give these problems some thought!

Problems for March 2007:

1. An empty conical tank (with the point down) has height of 10 feet and top radius of 10 feet. Water begins flowing into the tank at a rate of 3 cubic feet per minute. Find a function $h(t)$ that describes the height of the water t minutes after the water begins flowing.
2. Choose any 5 points from the interior of an equilateral triangle having sides of length 1 inch. Prove that 2 of these points are within $\frac{1}{2}$ inch of each other.