

## Problem of the Month, April 2008

*Please turn all solutions into Dr. Dunn's office, JB 322. You may slide your solutions under his door as well. Most elegant solution wins a \$10 gift certificate to the bookstore! Solutions will be accepted anytime during the month of April, 2008. Good luck!*

Let  $a, b, c$  and  $d$  be distinct integers. Please show that  $x = (a + b + c + d)/4$  is the only integer solution to the equation

$$(x - a)(x - b)(x - c)(x - d) = 4.$$

*Dr. Jetter offers the following hint to this month's problem. She observes that since  $a, b, c,$  and  $d$  are distinct integers, for any integer  $x$  each of the factors on the left above is a distinct integer.*