Bilkent University
Department of Mathematics

Problem Of The Month

Term: September 2013

Show that for all positive real numbers a, b, c satisfying $a + b + c = 1$ the following inequality is held:

$$\frac{a^4 + 5b^4}{a(a+2b)} + \frac{b^4 + 5c^4}{b(b+2c)} + \frac{c^4 + 5a^4}{c(c+2a)} \geq 1 - ab - bc - ca$$