

**Weekly Problem Competition**

**Friday, March 28, 2008**

Prove the inequality

$$x^6y^6 + x^6z^6 + y^6z^6 + 3x^4y^4z^4 \geq 2(x^3 + y^3 + z^3)x^3y^3z^3,$$

where  $x, y, z \in \mathbb{R}$ .

**Remarks:**

The rules of the competition <http://www.math.iit.edu/~weeklyproblem>

You have to submit the solution by email, to [weeklyproblem@math.iit.edu](mailto:weeklyproblem@math.iit.edu)

Please feel free to tell to any undergraduate student about the competition.

**Good Luck !**