PP45238

MIHÁLY BENCZE - ROMANIA

If $a, b, c > 0; a + b + c = 1$ then:

$$\frac{(a+2)^3}{(b+2)^2} + \frac{(b+2)^3}{(c+2)^2} + \frac{(c+2)^3}{(a+2)^2} \geq 7$$

Solution by Daniel Sitaru, Claudia Nănuţi.

$$\frac{(a+2)^3}{(b+2)^2} + \frac{(b+2)^3}{(c+2)^2} + \frac{(c+2)^3}{(a+2)^2} \overset{\text{RADON}}{\geq}$$

$$\geq \frac{(a+2+b+2+c+2)^3}{(b+2+c+2+a+2)^2} = (a+b+c)+6 =$$

$$= 1 + 6 = 7$$

Equality holds for $a = b = c$.

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