PP34522

MIHÁLY BENCZE - ROMANIA

In all triangles ABC holds:

$$e^{\mu(A)} + e^{\mu(B)} + e^{\mu(C)} + \sum_{cyc} \sin(e^{\mu(A)} - 1) > 2\pi + 3$$

Solution by Daniel Sitaru.

$$e^{\mu(A)} > \mu(A) + 1 \Rightarrow \sum_{cyc} e^{\mu(A)} > 3 + \sum_{cyc} \mu(A)$$

$$\sum_{cyc} e^{\mu(A)} > \pi + 3 \tag{1}$$

$$\sum_{cyc} \sin(e^{\mu(A)} - 1) > \sum_{cyc} (e^{\mu(A)} - 1) >$$

$$> \sum_{cyc} (\mu(A) + 1 - 1) = \sum_{cyc} \mu(A) = \pi$$

$$\sum_{cyc} \sin(e^{\mu(A)} - 1) > \pi \tag{2}$$

By adding $(1);(2)$:

$$\sum_{cyc} e^{\mu(A)} + \sum_{cyc} \sin(e^{\mu(A)} - 1) > 2\pi + 3$$

□

Mathematics Department, National Economic College "Theodor Costescu", Drobeta Turnu - Severin, Romania
Email address: dansitaru63@yahoo.com