

PP40232

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If $a, b, c > 0$ then:

$$\frac{1}{a+1} + \frac{1}{b+1} + \frac{1}{c+1} = 1 \Rightarrow a + b + c \geq 6$$

Solution by Rovsen Pirguliyev - Azerbaijan.

Using Bergström's inequality, we have:

$$\begin{aligned} 1 &= \frac{1^2}{a+1} + \frac{1^2}{b+1} + \frac{1^2}{c+1} \geq \frac{(1+1+1)^2}{a+b+c+3} \Rightarrow \\ &\Rightarrow a + b + c + 3 \geq 9 \Rightarrow a + b + c \geq 6 \end{aligned}$$

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