

Corrigendum to “On the Iyengar–Madhava Rao–Nanjundiah inequality and its hyperbolic version” [Notes on Number Theory and Discrete Mathematics, Vol. 24, 2018, No. 2, 134–139]

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In paper [1], the right-hand side of Corollary 2.2. states that

$$\sin x / x < \cos(x + d) \quad (1)$$

for any x in $(0, \pi/2)$, where $d = \arccos(2/\pi) - \pi/2 = -0.6901\dots$

Inequality (1) was a consequence of the bounds

$$x + d < \arccos((\sin x)/x) < x \quad (2)$$

and this implies that (1) holds true in fact in the interval $[-d, \pi/2)$.

As in $(0, -d)$ the function $(\sin x)/x$ is strictly decreasing and $\cos x$ strictly increasing, there is a solution $x = k$ of equation $(\sin x)/x = \cos(x + d)$, where $k = 0.4371\dots$ Thus (1) holds in $(k, -d)$, too.

Therefore, (1) should be corrected to x in $(k, \pi/2)$ in place of $(0, \pi/2)$.

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Reference

- [1] Sándor, J. (2018). On the Iyengar–Madhava Rao–Nanjundiah inequality and its hyperbolic version. *Notes on Number Theory and Discrete Mathematics*, 24 (2), 134–139.