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This month's "free sample" is:

3882. *Proposed by Mehmet Sahin.*

Let ABC be a right angle triangle with $\angle CAB = 90^\circ$. Let $[AD]$ be an altitude and let I_1 and I_2 be the incenters of the triangles ABD and ADC, respectively. Let ρ be the radius of the circle through the points B, I_1 and I_2 and let r by the inradius of the triangle ABC. Prove that

$$\frac{\rho}{r} = \sqrt{2+\sqrt{2}}.$$

. . . .

3882. *Proposé par Mehmet Sahin.*

Soit ABC un triangle rectangle en A et soit $[AD]$ une hauteur du triangle. I_1 et I_2 sont les centres des cercles inscrits dans les triangles respectifs ABD et ADC. Soit ρ le rayon du cercle qui passe aux points B, I_1 et I_2 et soit r le rayon du cercle inscrit dans le triangle ABC. Démontrer que

$$\frac{\rho}{r} = \sqrt{2+\sqrt{2}}.$$