

PROBLEMAS DE TRIGONOMETRÍA

Problema 195:

Escríbase, en función de $\operatorname{tg} a$ y $\operatorname{tg} b$, la siguiente expresión:

$$\left(\frac{\operatorname{sen} a}{\operatorname{sec} b} + \frac{2\operatorname{sen} b}{\operatorname{sec} a}\right) : \left(2\cos^2 \frac{a}{2} \cdot \cos b - \cos b\right)$$

Solución Problema 195:

$$\begin{aligned} &\left(\frac{\operatorname{sen} a}{\operatorname{sec} b} + \frac{2\operatorname{sen} b}{\operatorname{sec} a}\right) : \left(2\cos^2 \frac{a}{2} \cdot \cos b - \cos b\right) = \left(\frac{\operatorname{sen} a \cdot \operatorname{sec} a + 2\operatorname{sen} b \cdot \operatorname{sec} b}{\operatorname{sec} b \cdot \operatorname{sec} a}\right) : \left(2\cos^2 \frac{a}{2} - 1\right) \cos b = \\ &= \left(\frac{\operatorname{sen} a \cdot \frac{1}{\cos a} + 2\operatorname{sen} b \cdot \frac{1}{\cos b}}{\operatorname{sec} b \cdot \operatorname{sec} a}\right) : [(\cos a + 1) - 1] \cos b = \left(\frac{\frac{\operatorname{sen} a}{\cos a} + \frac{2\operatorname{sen} b}{\cos b}}{\operatorname{sec} b \cdot \operatorname{sec} a}\right) : [\cos a + 1 - 1] \cos b = \\ &= \left(\frac{\operatorname{tga} + 2 \operatorname{tgb}}{\frac{1}{\cos a} \cdot \frac{1}{\cos b}}\right) : \cos a \cdot \cos b = \left(\frac{\operatorname{tga} + 2 \operatorname{tgb}}{\frac{1}{\cos a \cdot \cos b}}\right) : \cos a \cdot \cos b = \left(\frac{(\operatorname{tga} + 2 \operatorname{tgb}) \cos a \cdot \cos b}{\cos a \cdot \cos b}\right) = \operatorname{tga} + 2 \operatorname{tgb} \end{aligned}$$