

PROBLEMAS DE TRIGONOMETRÍA

Problema 37:

Simplificar la siguiente expresión:

$$\frac{\sqrt{1 - \operatorname{sen}^2 a}}{\sqrt{1 - \operatorname{cos}^2 a}} \cdot \frac{\operatorname{sen} 2a}{\operatorname{cos} 2a} \cdot \sec^2 a (\operatorname{sen} a + \operatorname{cos} a)(\operatorname{sen} a - \operatorname{cos} a)$$

Solución Problema 37:

$$\frac{\sqrt{1 - \operatorname{sen}^2 a}}{\sqrt{1 - \operatorname{cos}^2 a}} \cdot \frac{\operatorname{sen} 2a}{\operatorname{cos} 2a} \cdot \sec^2 a (\operatorname{sen} a + \operatorname{cos} a)(\operatorname{sen} a - \operatorname{cos} a)$$

$$\frac{\operatorname{cosa}}{\operatorname{sen} a} \cdot \frac{\operatorname{sen} 2a}{\operatorname{cos} 2a} \cdot \frac{1}{\operatorname{cos}^2 a} \cdot (\operatorname{sen}^2 a - \operatorname{cos}^2 a)$$

$$\frac{\cancel{\operatorname{cosa}}}{\operatorname{sen} a} \cdot \frac{\operatorname{sen} 2a}{\operatorname{cos} 2a} \cdot \frac{1}{\operatorname{cos}^2 a} \cdot (\operatorname{sen}^2 a - \operatorname{cos}^2 a)$$

$$\frac{\cancel{\operatorname{cosa}}}{\operatorname{sen} a} \cdot \frac{\operatorname{sen} 2a}{\operatorname{cos} 2a} \cdot \frac{1}{\operatorname{cos}^2 a} \cdot (\operatorname{sen}^2 a - \operatorname{cos}^2 a)$$

$$\frac{1}{\cancel{\operatorname{sen} a}} \cdot \frac{2\cancel{\operatorname{sen} a} \cdot \cancel{\operatorname{cosa}}}{(\operatorname{cos}^2 a - \operatorname{sen}^2 a)} \cdot \frac{1}{\cancel{\operatorname{cosa}}} \cdot (\operatorname{sen}^2 a - \operatorname{cos}^2 a)$$

$$\frac{2}{(\operatorname{cos}^2 a - \operatorname{sen}^2 a)} [(-1)(-\operatorname{sen}^2 a + \operatorname{cos}^2 a)]$$

$$\frac{2}{(\operatorname{cos}^2 a - \operatorname{sen}^2 a)} [(-1)(\operatorname{cos}^2 a - \operatorname{sen}^2 a)]$$

$$\frac{2}{(\cancel{\operatorname{cos}^2 a} - \cancel{\operatorname{sen}^2 a})} [(-1)(\cancel{\operatorname{cos}^2 a} - \cancel{\operatorname{sen}^2 a})]$$

$$2(-1) = -2$$