

(a)  $\sec \alpha^2 + \csc \alpha^2 = \sec \alpha^2 \cdot \csc \alpha^2$

**Sol:**  $\left[ \frac{8}{-\cos(4\alpha)+1}, \frac{8}{-\cos(4\alpha)+1} \right] \rightarrow$   
True

(b)  $\tan \alpha + \tan \beta \frac{\cot \alpha + \cot \beta}{\tan \alpha \cdot \tan \beta} = \tan \alpha \cdot \tan \beta$

**Sol:**  $[\tan(\alpha) \tan(\beta), \tan(\alpha) \tan(\beta)] \rightarrow$   
True

## Parte I

$$\sin \alpha \cdot \cos \alpha \cos \alpha^2 - \sin \alpha^2 = \frac{\tan \alpha}{1 - \tan \alpha^2}$$

**Sol:**  $\left[ \frac{\tan(2\alpha)}{2}, \frac{\tan(2\alpha)}{2} \right] \rightarrow$  True