Question

$$\frac{\sin(a+b)}{\cos(a-b)} = \frac{\tan a + \tan b}{1 + \tan a \cdot \tan b}$$

$$\frac{\sin(a+b)}{\cos(a-b)} = \frac{\sin a \cdot \cos b + \cos a \cdot \sin b}{\cos a \cdot \cos b + \sin a \cdot \sin b} = \frac{(\sin a \cdot \cos b + \cos a \cdot \sin b)/\cos a \cdot \cos b}{(\cos a \cdot \cos b + \sin a \cdot \sin b)/\cos a \cdot \cos b} =$$

$$= \frac{\sin a \cdot \cos b / \cos a \cdot \cos b + \cos a \cdot \sin b / \cos a \cdot \cos b}{\cos a \cdot \cos b / \cos a \cdot \cos b + \sin a \cdot \sin b / \cos a \cdot \cos b} = \frac{\sin a / \cos a + \sin b / \cos b}{1 + \tan a \cdot \tan b} =$$

$$= \frac{\tan a + \tan b}{1 + \tan a \cdot \tan b}.$$

Proved.

Answer: proved.