

$$2 \tan a = 3 \tan b$$

$$\begin{aligned} \tan(a-b) &= \frac{\tan a - \tan b}{1 - \tan a \tan b} = \frac{2 \tan a - 2 \tan b}{2 - 2 \tan a \tan b} = \frac{\tan b}{2 + 3 \tan^2 b} = \\ &= \frac{\sin b}{2 \cos b + 3 \frac{\sin^2 b}{\cos b}} = \frac{\sin 2b}{2(2 \cos^2 b + 3 \sin^2 b)} = \frac{\sin 2b}{4 + 2 \sin^2 b} = \\ &= \frac{\sin 2b}{5 - \cos 2b} \end{aligned}$$