

## Answer on Question #49553 – Math – Trigonometry

**Task:**

if  $\sin X \cdot \cos Y = 1/4$  and  $3 \tan X = 4 \tan Y$  then  $\sin(X-Y) =$

**Solution:**

$$\sin x \cos y = \frac{1}{4}$$

$$3 \tan x = 4 \tan y$$

$$3 \frac{\sin x}{\cos x} = 4 \frac{\sin y}{\cos y} \Rightarrow 3 \sin x \cos y = 4 \sin y \cos x, \sin x \cos y = 1/4 \Rightarrow \frac{3}{4} = 4 \sin y \cos x \Rightarrow \sin y \cos x = \frac{3}{16}$$

$$\sin(x - y) = \sin x \cos y - \cos x \sin y = \frac{1}{4} - \frac{3}{16} = \frac{1}{16}$$