Task 1. *If* $5\tan a = 4$*, show that* $\frac{5\sin a - 3\cos a}{5\sin a + 2\cos a} = \frac{1}{6}$.

Solution. Divide the numerator and denominator of the fraction by $\cos a$:

$$\frac{5\sin a - 3\cos a}{5\sin a + 2\cos a} = \frac{5\frac{\sin a}{\cos a} - 3}{5\frac{\sin a}{\cos a} + 2}.$$

But $\frac{\sin a}{\cos a} = \tan a$, therefore,

$$\frac{5\sin a - 3\cos a}{5\sin a + 2\cos a} = \frac{5\tan a - 3}{5\tan a + 2} = \frac{4-3}{4+2} = \frac{1}{6},$$

as desired. □