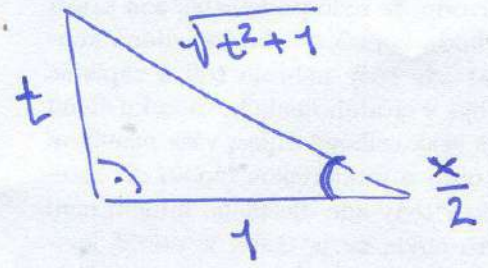
$$\int \frac{2}{\sin x + \cos x + 1}\,dx = \int \frac{2}{\frac{2t}{t^2+1} + \frac{1-t^2}{t^2+1} + 1} \cdot \frac{2}{t^2+1}\,dt$$

substitúce: $\boxed{t = \operatorname{tg}\frac{x}{2}}$

$$\operatorname{arctan} t = \frac{x}{2}$$

$$2\operatorname{arctan} t = x$$

$$\boxed{\frac{2}{t^2+1}\,dt = dx}$$



$$\sin\frac{x}{2} = \frac{t}{\sqrt{t^2+1}}$$

$$\cos\frac{x}{2} = \frac{1}{\sqrt{t^2+1}}$$

$$\sin x = \sin\left(2\tfrac{x}{2}\right) = 2\sin\tfrac{x}{2}\cos\tfrac{x}{2} = \frac{2t}{t^2+1}$$

$$\cos x = \cos\left(2\tfrac{x}{2}\right) = \cos^2\tfrac{x}{2} - \sin^2\tfrac{x}{2} = \frac{1-t^2}{t^2+1}$$

$$= 4 \cdot \int \frac{1}{2t+1-t^2+t^2+1}\,dt = 4 \cdot \int \frac{1}{2+2t}\,dt$$

$$= 2 \cdot \int \frac{1}{1+t}\,dt = \underline{\underline{2\ln\left|1+\operatorname{tg}\frac{x}{2}\right| + c}}$$