$$\int \frac{\cos x}{2+\sin x}\,dx = \int \frac{1}{2+\sin x}\cdot \cos x\,dx = \int \frac{1}{2+y}\,dy$$

Substituce

$y = \sin x$ "d"

$dy = \cos x\,dx$

$$= \ln|2+y| + c$$

$$= \ln|2+\sin x| + c$$

Věta:

$\varphi_{(x)} = \sin x$

$\varphi'_{(x)} = \cos x$

$$f(y) = \frac{1}{2+y}$$

$$f(\varphi)\cdot\varphi' = \frac{1}{2+\sin x}\cdot\cos x$$

$$F = \ln|2+y|$$

$$\int \frac{\cos x}{2+\sin x}\,dx \overset{c}{=} \ln|2+\sin x|$$

$\varphi = \sin x$ $\qquad D_\varphi = (\alpha, \beta) = (-\infty, \infty)$

$$\varphi((-\infty,\infty)) = [-1,1]$$

$\varphi'$ má dci na $(-\infty,\infty)$ ✓

$f = \dfrac{1}{2+y}$ $\qquad F = \ln|2+y|$

$(-\infty, \cancel{-2})$ $\qquad (-2, \infty)$

$[-1,1] \subset (-2,\infty)$ $\qquad (a, b)$

Per partes

$$\int u'v = uv - \int uv'$$

$$\int x \cos x \, dx = \sin x \cdot x - \int 1 \cdot \sin x \, dx$$

$v = x \qquad u' = \cos x \qquad = x \sin x - (-\cos x) + C$

$v' = 1 \qquad u = \sin x \qquad x \in \mathbb{R}$

$$\int gF = GF - \int Gf$$

$g = \cos x \qquad G = \sin x$

$F = x \qquad f = 1 \qquad \checkmark$

$f, g$ spoj. ? na $\mathbb{R}$