

$$\int \operatorname{tg} x \, dx =$$

INT-S1-041

$$= \int \frac{\operatorname{sen} x}{\operatorname{cos} x} \, dx$$

$$\text{TIPO: } \int \frac{f'(x)}{f(x)} \, dx = \ln|f(x)| + k$$

SOSTITUZIONE : $\operatorname{cos} x = z$

NON ESPlicito

$$z' = \frac{dz}{dx} = -\operatorname{sen} x \rightarrow dx = -\frac{1}{\operatorname{sen} x} dz$$

$$= \int \frac{\operatorname{sen} x}{z} \left(-\frac{1}{\operatorname{sen} x}\right) dz =$$

$$= - \int \frac{1}{z} dz = - \ln|z| + k =$$

$$= \boxed{- \ln|\operatorname{cos} x| + k}$$