

$$\int \operatorname{sen} x \cdot \operatorname{cos} x \cdot dx =$$

INT-S1-018

SOSTITUZIONE  $\operatorname{cos} x = z$ NON ESPlicito  $x$ 

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

$$dz = -\operatorname{sen} x \cdot dx$$

$$= - \int z \, dz =$$

$$= -\frac{1}{2} z^2 + k =$$

$$= \boxed{-\frac{1}{2} \operatorname{cos}^2 x + k}$$

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ALTRO MODO:  $\int \operatorname{sen} x \operatorname{cos} x \, dx = \frac{1}{2} \int 2 \operatorname{sen} x \operatorname{cos} x \, dx =$

$$= \frac{1}{2} \int \operatorname{sen} 2x = -\frac{1}{4} \operatorname{cos} 2x + k =$$

$$= -\frac{1}{4} (2 \operatorname{cos}^2 x - 1) + k =$$

$$= -\frac{1}{2} \operatorname{cos}^2 x + \frac{1}{4} + k =$$

$$= -\frac{1}{2} \operatorname{cos}^2 x + k_2$$