

$$\int \arcsen x \, dx =$$

INT-S1-004

- PER PARTI

$$= \int 1 \cdot \arcsen x \, dx =$$

$$= [S_1] \cdot \arcsen x - \int [S_1] [D \arcsen x] \, dx =$$

$$= x \arcsen x - \int x \frac{1}{\sqrt{1-x^2}} \, dx =$$

$$= x \arcsen x - \int \frac{x}{\sqrt{1-x^2}} \, dx =$$

TIPO: $\int \frac{f'(x)}{2\sqrt{f(x)}} \, dx = \sqrt{f(x)} + k$

SOSTITUZIONE: $1-x^2 = z$

NON ESPlicito RISPETTO A x

$$z = 1-x^2$$

$$z' = \frac{dz}{dx} = -2x$$

$$dx = \frac{dz}{-2x}$$

$$= x \arcsen x - \int \frac{\cancel{x}}{\sqrt{z}} \cdot \frac{dz}{\cancel{-2x}} =$$

$$= x \arcsen x - \int \frac{1}{-2\sqrt{z}} \, dz =$$

$$= x \arcsen x + \int \frac{1}{2\sqrt{z}} \, dz =$$

$$= x \arcsen x + \sqrt{z} + k =$$

$$= \boxed{x \arcsen x + \sqrt{1-x^2} + k}$$