Tarefa 4 - Cálculo 1 - 790753

3) $\int \frac{x \cdot \operatorname{arcsen} x}{\sqrt{1-x^2}} \cdot dx$

$u = \operatorname{arcsen} x$

$\therefore \frac{du}{dx} = \frac{1}{\sqrt{1-x^2}}$

$du = \frac{dx}{\sqrt{1-x^2}}$

$\int u \cdot dv = u \cdot v - \int v \cdot du$

$dv = \frac{x}{\sqrt{1-x^2}} \cdot dx$

$v = \int \frac{x}{\sqrt{1-x^2}} \cdot dx$

$w = 1 - x^2$

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

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

$v = \int \frac{x}{\sqrt{w}} \cdot -\frac{dw}{2x}$

$v = -\frac{1}{2} \cdot \int \frac{dw}{\sqrt{w}}$

$v = -\frac{1}{2} \, 2 \cdot \sqrt{w}$

$v = -\sqrt{1-x^2}$

$-\sqrt{1-x^2} \cdot \operatorname{arcsen} x + \int \frac{\sqrt{1-x^2}}{\sqrt{1-x^2}} dx$

$-\sqrt{1+x^2} \cdot \operatorname{arcsen} x + x + C$