1a) QUEREMOS:

$$\int x^{\alpha} \sqrt{a^2x^2-1}^{\beta} dx$$

$$= K \int u^{\alpha} \sqrt{u^2-1}^{\beta} du$$

TEMOS:

$$\int x^{\alpha} \sqrt{a^2x^2-1}^{\beta} dx \qquad \left[\begin{array}{l} u = ax \\ \frac{1}{a}u = x \\ \frac{1}{a}du = dx \end{array}\right]$$

$$= \int \left(\frac{u}{a}\right)^{\alpha} \sqrt{u^2-1}^{\beta} \cdot \frac{1}{a} du$$

$$= \frac{1}{a^{\alpha+1}} \int u^{\alpha} \sqrt{u^2-1}^{\beta} du$$

ENTÃO:

$$[1A] = \left(\begin{array}{ll} \int x^{\alpha} \sqrt{a^2x^2-1}^{\beta} dx & [u=ax] \\ = \frac{1}{a^{\alpha+1}} \int u^{\alpha} \sqrt{u^2-1}^{\beta} du & \end{array} \right)$$