1a) QUEREMUS:

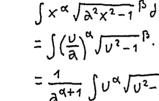
$$\int x^{d} \sqrt{a^{2}x^{2}-1}^{\beta} dx$$

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

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

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

$$\left[\frac{u}{a} + \frac{u}{a}\right]^{\alpha} du = dx$$



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

$$= \int \left(\frac{U}{\lambda}\right)^{\alpha} \sqrt{U^{2} - 1} dx$$

$$= \frac{1}{\lambda^{\alpha+1}} \int U^{\alpha} \sqrt{U^{2} - 1} dx$$

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

$$= \int \left(\frac{U}{\lambda}\right)^{\alpha} \sqrt{V^{2}-1} dx$$

$$= \frac{1}{\lambda^{\alpha+1}} \int U^{\alpha} \sqrt{U^{2}-1} dx$$

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

$$= \frac{1}{a^{\alpha+1}} \int U^{\alpha} \sqrt{U^{2}-1} \, ^{\beta} dU$$

$$= \frac{1}{a^{\alpha+1}} \int U^{\alpha} \sqrt{U^{2}-1} \, ^{\beta} dV$$

$$= \frac{1}{A^{\alpha+1}} \left[\int X^{\alpha} \sqrt{a^{2}X^{2}-1} \, ^{\beta} dX \quad \left[U=aX \right] \right]$$

$$= \frac{1}{a^{\alpha+1}} \int U^{\alpha} \sqrt{U^{2}-1} \, ^{\beta} dU$$