

# Kerkour

$$\int_0^x \frac{dX}{1-X} = \ln\left(\frac{1}{1-X}\right)$$

$$\int_{X_1}^{X_2} \frac{dX}{(1-X)^2} = \frac{1}{1-X_2} - \frac{1}{1-X_1}$$

$$\int_0^x \frac{dX}{(1-X)^2} = \frac{X}{1-X}$$

$$\int_0^x \frac{dX}{1+\epsilon X} = \frac{1}{\epsilon} \ln(1+\epsilon X)$$

$$\int_0^x \frac{(1+\epsilon X)dX}{1-X} = (1+\epsilon) \ln\left(\frac{1}{1-X}\right) - \epsilon X$$

$$\int_0^x \frac{(1+\epsilon X)dX}{(1-X)^2} = \frac{(1+\epsilon)X}{1-X} - \epsilon \ln\left(\frac{1}{1-X}\right)$$

$$\int_0^x \frac{(1+\epsilon X)^2 dX}{(1-X)^2} = 2\epsilon(1+\epsilon) \ln(1-X) + \epsilon^2 X + \frac{(1+\epsilon)^2 X}{1-X}$$

$$\int_0^x \frac{dX}{(1-X)(\theta_1 - X)} = \frac{1}{\theta_1 - 1} \ln\left(\frac{\theta_1 - X}{\theta_1(1-X)}\right) \quad \theta_1 \neq 1$$

$$\int_0^w (1-\alpha w)^{1/2} dw = \frac{2}{3\alpha} \left(1 - (1-\alpha w)^{3/2}\right)$$

$$\int_0^x \frac{dX}{aX^2 + bX + c} = \frac{-2}{2aX + b} + \frac{2}{b} \ln X^2 = \dots$$

$$\int_0^x \frac{dX}{aX^2 + bX + c} = \frac{1}{a(p-q)} \ln\left(\frac{qX-p}{pX-q}\right) \quad p > q$$

could be noted that  $p$  and  $q$  are the roots of the equation.

$$\int_0^x \frac{a+bX}{c+gX} dX = \frac{bX}{g} + \frac{ag-bc}{g^2} \ln\left(\frac{c+gX}{c}\right)$$