NEW FORMULA 3.311.3

The original formula is

$$\int_{-\infty}^{\infty} \frac{e^{-px}\,dx}{1+e^{-qx}} = \frac{\pi}{q\sin(\pi p/q)}$$

The change of variables $t = qx$ produces the new formula (writing p/q as a and going back to x as the variable of integration)

$$\int_{-\infty}^{\infty} \frac{e^{-ax}\,dx}{1+e^{-x}} = \frac{\pi}{\sin \pi a}$$