

NEW FORMULA 3.196.4

The original formula is

$$\int_1^{\infty} \frac{dx}{(a-bx)(x-1)^\nu} = -\frac{\pi}{b} \operatorname{cosec}(\pi\nu) \left(\frac{b}{b-a}\right)^\nu$$

It reads better in the form

$$\int_1^{\infty} \frac{dx}{(a-bx)(x-1)^\nu} = -\frac{\pi}{b \sin \pi\nu} (1-a/b)^{-\nu}$$