FORMULA 3.246

$$\int_0^\infty \frac{(1-x^q)x^{p-1}}{1-x^r}\,dx = \frac{\pi}{r}\sin\left(\frac{\pi q}{r}\right)\operatorname{cosec}\left(\frac{\pi p}{r}\right)\operatorname{cosec}\left(\frac{\pi(p+q)}{r}\right)$$