

$$\frac{\pi}{4x} \operatorname{tanh}(\pi x/2) = \sum_k^{\mathbb{N}} \frac{1}{(2k+1)^2 - x^2}$$

$$\frac{\pi}{4x} \operatorname{tanh}(\pi x/2) = \sum_k^{\mathbb{N}} \frac{1}{(2k+1)^2 + x^2}$$

$$\pi \cot \pi v = \sum_n^{\mathbb{Z}} \frac{1}{v+n}$$

$$\frac{\pi}{\pi v} = \sum_n^{\mathbb{Z}} \frac{-1}{v+n}$$

$$\int_{dx}^{0|1} \frac{x^{p-1} + x^{q-p-1}}{1+x^q} = \sum_n^{\mathbb{Z}} \frac{-1}{p+nq} = \frac{\pi}{q^{\pi p/q}}$$

$$\int_{dx}^{0|1} \frac{x^{p-1} - x^{q-p-1}}{1-x^q} = \sum_n^{\mathbb{Z}} \frac{1}{p+nq} = \frac{\pi}{q} \cot \pi p/q$$

$$\Psi'(z) = \sum_n^{\mathbb{N}} \frac{1}{(z+n)^2}$$

$$\frac{\Gamma_x \Gamma_{1/2}}{\Gamma_{x+1/2}} = \sum_k^{\mathbb{N}} \frac{(2k)!}{4^k (k!)^2} \frac{1}{x+k}$$