$$\frac{{}^{\pi x}\mathfrak{s}}{\pi x} = \prod_{n \geqslant 1} \left(1 - \frac{x^2}{n^2}\right) = \prod_{n}^{\mathbb{Z}^\times} \left(1 - \frac{x}{n}\right)$$

$$\prod_{1 \leqslant k \leqslant 2m+1} \left(1 - y^2 \frac{1 + {}^{2\pi k/(2m+1)}\mathfrak{c}}{1 - {}^{2\pi k/(2m+1)}\mathfrak{c}}\right) = \frac{\overbrace{1+iy}^{n} - \overbrace{1+iy}^{n}}{2iy}$$

$$\prod_{1 \leqslant k \leqslant 2m+1} \left(1 - \frac{x^2}{n^2} \frac{1 + {}^{2\pi k/(2m+1)}\mathfrak{c}}{1 - {}^{2\pi k/(2m+1)}\mathfrak{c}}\right) = \frac{\overbrace{1+ix/n}^{n} - \overbrace{1+ix/n}^{n}}{2ix} \leadsto \frac{{}^{x}\mathfrak{s}}{x}$$

$$\left(1 - \frac{x^2}{n^2}\right) = \left(1 - \frac{x}{n}\right)\left(1 + \frac{x}{n}\right) = \left(1 - \frac{x}{n}\right)\left(1 - \frac{x}{-n}\right)$$

$$\frac{\sinh(\pi x)}{\pi x} = \prod_{n \geqslant 1} \left(1 + \frac{x^2}{n^2}\right)$$

$${}^{\pi x}\mathfrak{c} = \prod_{n \geqslant 0} \left(1 - \frac{x^2}{(n + 1/2)^2}\right)$$

$$\cosh(\pi x) = \prod_{n \geqslant 0} \left(1 + \frac{x^2}{(n + 1/2)^2}\right)$$