$$^{u}\mathbb{Z} = \sum_{n}^{\mathbb{Z}} {}^{-\pi u}{}_{n}\mathcal{E}^{n} = \sum_{n}^{\mathbb{Z}} \mathcal{E}^{-\pi n^{2} u}$$

$$^{u^{-1}}\mathbb{Z} = u^{1/2}\, {}^{u}\mathbb{Z}$$

$$^{z}\Theta = \sum_{n}^{\mathbb{Z}} {}^{2\pi i z}{}_{n}\mathcal{E}^{n} = \sum_{n}^{\mathbb{Z}} \mathcal{E}^{2\pi i n z n}$$

$$\Theta \in {}^{\mathcal{I} z > 0} \underset{\omega}{\triangle} \mathbb{C}$$

$$^{-1/4z}\Theta = \widehat{2z/i}^{\;1/2}\, {}^{z}\Theta$$

$$\mathcal{I}\tau > 0$$

$$^{\tau}\Theta = {}^{\pi i \tau}{}_{n}\mathcal{E}^{n} \sum_{n}^{\mathbb{Z}}$$

$$\frac{1}{2}\ \text{auto}\ \begin{array}{c|c} 1+2\mathbb{Z} & 2\mathbb{Z} \\ \hline 2\mathbb{Z} & 1+2\mathbb{Z} \end{array}$$

$$^{-\frac{-1}{\tau}}\Theta = (-i\tau)^{1/2}\, {}^{\tau}\Theta$$

$$^{u}\Theta_{4} = \prod_{n \geqslant 1} \left(1 - 2^{2u}\mathfrak{c} q^{2n-1} + q^{4n-2}\right) \prod_{n \geqslant 1} \left(1 - q^{2n}\right)$$

$$\frac{^{u}\underset{-}{\Theta}_{4}}{^{u}\Theta_{4}} = 4 \sum_{n \geqslant 1} \frac{q^{n}}{1 - q^{2n}}\, {}^{2nu}\mathfrak{s}$$

$$\frac{^{u}\underset{-}{\Theta}_{1}}{^{u}\Theta_{1}} = {}^{u}\mathfrak{t}^{-1} + 4 \sum_{n \geqslant 1} \frac{q^{2n}}{1 - q^{2n}}\, {}^{2nu}\mathfrak{s}$$

$$\frac{^{u}\underset{-}{\Theta}_{3}}{^{u}\Theta_{3}} = 4 \sum_{n \geqslant 1} \frac{(-1)^{n} q^{n}}{1 - q^{2n}}\, {}^{2nu}\mathfrak{s}$$

$$\frac{^{u}\underset{-}{\Theta}_{2}}{^{u}\Theta_{2}} = -\,{}^{u}\mathfrak{t} + 4 \sum_{n \geqslant 1} \frac{(-1)^{n} q^{2n}}{1 - q^{2n}}\, {}^{2nu}\mathfrak{s}$$

$$\prod_{k\geqslant 1}\left(1-tx^k\right)=\sum_{n}^{\mathbb{N}}\frac{(-1)^n x^{n(n+1)/2}t^n}{\prod\limits_{1\leqslant k\leqslant n}\left(1-x^k\right)}=\sum_{n}^{\mathbb{N}}\prod_{1\leqslant k\leqslant n}\frac{(-t)\,x^k}{1-x^k}$$

$$\prod_{k\geqslant 1}\frac{1}{1-tx^k}=\sum_{n}^{\mathbb{N}}\frac{t^n}{\prod\limits_{1\leqslant k\leqslant n}\left(1-x^k\right)}=\sum_{n}^{\mathbb{N}}\prod_{1\leqslant k\leqslant n}\frac{t}{1-x^k}$$

$$1-2q+2\,q^4-2\,q^9+\cdots={}^{0}\Theta_4=\prod_{n\geqslant 1}\overbrace{1-q^{2n-1}}^{2}\prod_{n\geqslant 1}\left(1-q^{2n}\right)$$

$$1-2\,q^4+2\,q^{16}-\cdots=\prod_{n\geqslant 1}\left(1+q^{4n-2}\right)\prod_{n\geqslant 1}\left(1-q^{2n}\right)$$