

$$\int_{\mathcal{F}} d\mu \, \Gamma_{(2,2)} \, (j+24)$$

$$= -12 \log [4\pi T_2 U_2 |\eta(U)|^4] + \sum_{N>0} \frac{1}{|N|} T_{|N|} \cdot (j(U) + 24) e^{2\pi(|N|T_2 + iNT_1)} + \text{c.c.}$$