

$$\sum_p \nu_p(\gamma) + \nu_o(\gamma)/3 + \nu_i(\gamma)/2 + \nu_\infty(\gamma) = k/12$$

$$2\pi i \sum_p \nu_p(\gamma) = \underbrace{\int_{v_r} \frac{1}{\gamma} - \int_{v_r \times T} \frac{1}{\gamma}}_{=0} + \underbrace{\int_{c_r \times S} \frac{1}{\gamma} - \int_{c_r} \frac{1}{\gamma}}_{=k(\log z_r - \log w_r)} - \underbrace{\int_{a_r} \frac{1}{\gamma}}_{\rightsquigarrow \pi i \nu_o(\gamma)/3} - \underbrace{\int_{b_r} \frac{1}{\gamma}}_{\rightsquigarrow \pi i \nu_i(\gamma)} - \underbrace{\int_{d_r} \frac{1}{\gamma}}_{\rightsquigarrow \pi i \nu_o(\gamma)/3} - \underbrace{\int_{h_r} \frac{1}{\gamma}}_{=2\pi i \nu_\infty(\gamma)}$$

$$\log z_r - \log w_r \rightsquigarrow \log i - \log(o+1) = i(\pi/2 - \pi/3) = \pi i/6$$

