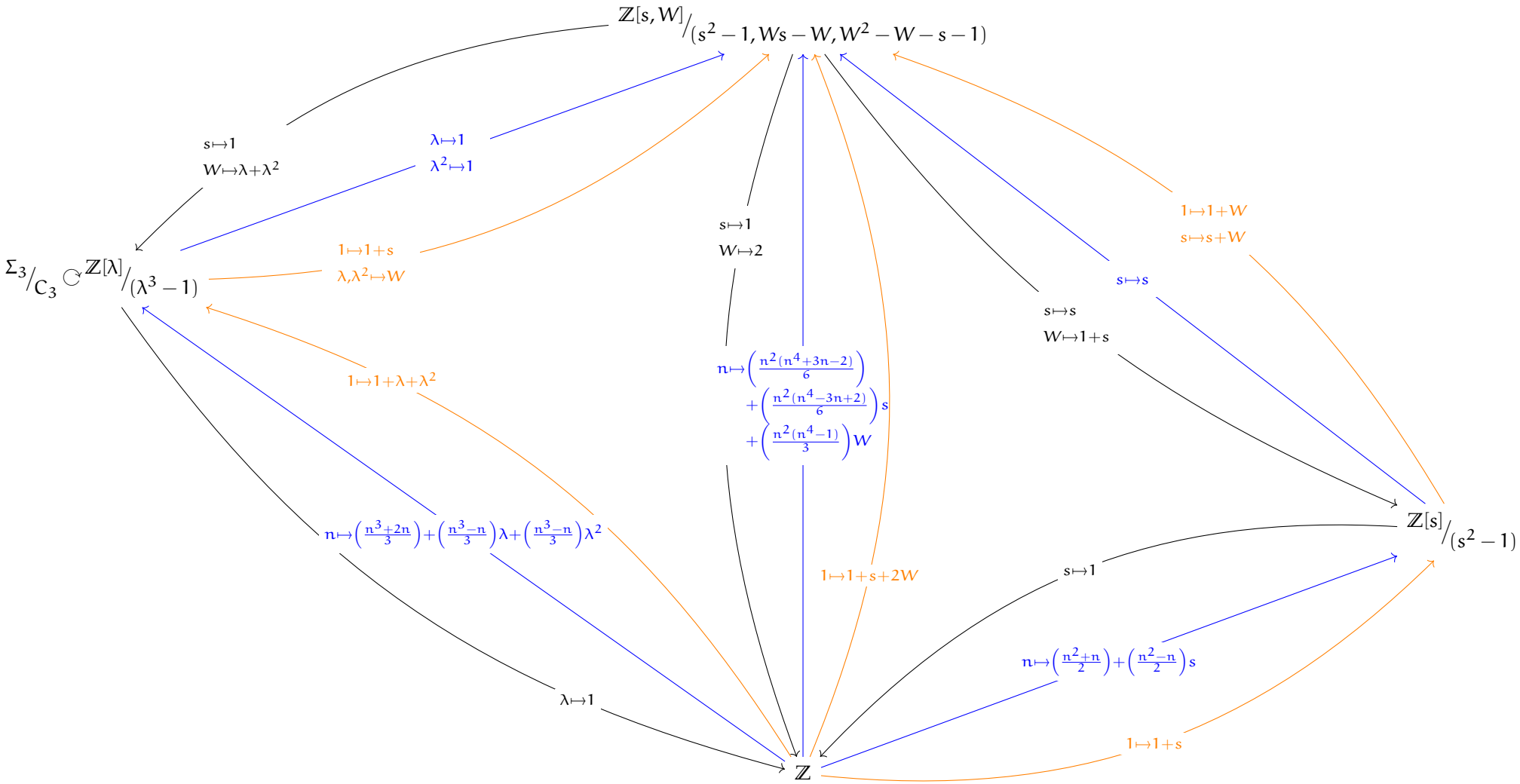
$\Sigma_3 = \langle \tau, \sigma \mid \tau^2 = \sigma^3 = 1,\ \tau\sigma\tau = \sigma^2 \rangle$




$$\mathrm{nm}_{C_3}^{\Sigma_3}(a+b) = \mathrm{nm}_{C_3}^{\Sigma_3}(a) + \mathrm{nm}_{C_3}^{\Sigma_3}(b) + \mathrm{tr}_{C_3}^{\Sigma_3}\left(a(\tau C_3 \cdot b)\right)$$

$$\Sigma_3/C_3 \circlearrowright \mathbb{Z}[\lambda]/(\lambda^3-1) \quad : \quad \tau C_3 \cdot \lambda = \lambda^2 \text{ and } \tau C_3 \cdot \lambda^2 = \lambda$$