

$$\mathbb{1} \triangleleft^{\mathcal{O}} \mathbb{N} \triangleleft \xrightarrow{\pi} \text{End } \mathbb{1} \triangleleft^{\mathcal{O}} \mathbb{N} \triangleleft$$

$$1 \in \mathbb{1} \triangleleft \text{mod } \mathbb{1}$$

$$\vdash \in \mathbb{1} \triangleleft = \text{Hom}(\mathbb{1} \triangleleft, \mathbb{1} \triangleleft)$$

$$\mathbb{1} \triangleleft^{\mathcal{O}} \mathbb{N} \triangleleft \xleftarrow{\tilde{\mathbb{1}} = \mathbb{1} \times + \mathbb{1} \mathcal{Q} \vdash} \mathbb{1} \triangleleft^{\mathcal{O}} \mathbb{N} \triangleleft$$

$$\tilde{\mathbb{1}} = \overbrace{\mathbb{1} \times + \mathbb{1} \mathcal{Q} \vdash} \overbrace{\mathbb{1} \times + \mathbb{1} \mathcal{Q} \vdash} = \overbrace{\mathbb{1} \times \mathbb{1} \times}^{=0} + \mathbb{1} \times \mathbb{1} \mathcal{Q} \vdash + \mathbb{1} \mathcal{Q} \vdash \mathbb{1} \times + \overbrace{\mathbb{1} \mathcal{Q} \vdash \mathbb{1} \mathcal{Q} \vdash}^{=0} = \mathbb{1} \mathcal{Q} \mathbb{1} \mathcal{I}$$