

$$\gamma \# = \gamma \wedge \#$$

$$\gamma + \# = \underbrace{\gamma \wedge \bar{\#}} \vee \underbrace{\# \wedge \bar{\gamma}} = \underbrace{\gamma \vee \#} \wedge \overline{\gamma \wedge \#}$$

$$\underbrace{\gamma \vee \#} \wedge \overline{\gamma \wedge \#} = \underbrace{\gamma \vee \#} \wedge \underbrace{\bar{\gamma} \vee \bar{\#}} \stackrel{D1}{=} \underbrace{\gamma \vee \#} \wedge \bar{\gamma} \vee \underbrace{\gamma \vee \#} \wedge \bar{\#} \stackrel{D1}{=} \underbrace{\gamma \wedge \bar{\gamma}} \vee \underbrace{\# \wedge \bar{\#}} \vee \underbrace{\gamma \wedge \bar{\#}} \vee \underbrace{\# \wedge \bar{\gamma}} \stackrel{=0}{=} \underbrace{\# \wedge \bar{\gamma}} \vee \underbrace{\gamma \wedge \bar{\#}}$$

$$\overline{\gamma + \#} = \overline{\underbrace{\gamma \vee \#} \wedge \overline{\gamma \wedge \#}} = \overline{\gamma \vee \#} \vee \overline{\overline{\gamma \wedge \#}} = \overline{\gamma \vee \#} \vee \underbrace{\gamma \wedge \#} = \underbrace{\bar{\gamma} \wedge \bar{\#}} \vee \underbrace{\gamma \wedge \#}$$

$$\left\{ \begin{array}{l} \gamma + \# = \# + \gamma \\ \gamma \# = \# \gamma \end{array} \right.$$

$$\gamma + \# = \underbrace{\gamma \vee \#} \wedge \overline{\gamma \wedge \#} = \underbrace{\# \vee \gamma} \wedge \overline{\# \wedge \gamma} = \# + \gamma$$

$$\gamma \# = \gamma \wedge \# = \# \wedge \gamma = \# \gamma$$

$$\left\{ \begin{array}{l} \underbrace{\# + \#} + \gamma = \gamma + \underbrace{\# + \#} \\ \underbrace{\# \#} \gamma = \# \underbrace{\# \gamma} \end{array} \right.$$

$$\underbrace{\# + \#} + \gamma = \underbrace{\# + \#} \wedge \overline{\# \wedge \#} \vee \overline{\# + \#} \wedge \gamma = \underbrace{\# \wedge \bar{\#}} \vee \underbrace{\bar{\#} \wedge \#} \vee \underbrace{\bar{\#} \wedge \#} \vee \underbrace{\# \wedge \bar{\#}} \wedge \gamma$$

$$= \underbrace{\# \wedge \bar{\#}}_1 \vee \underbrace{\bar{\#} \wedge \#}_2 \vee \underbrace{\bar{\#} \wedge \#}_3 \vee \underbrace{\# \wedge \bar{\#}}_4 \wedge \gamma = \underbrace{\# \wedge \bar{\#}}_2 \vee \underbrace{\bar{\#} \wedge \#}_3 \vee \underbrace{\bar{\#} \wedge \#}_1 \vee \underbrace{\# \wedge \bar{\#}}_4 \wedge \gamma$$

$$= \underbrace{\# + \#} + \gamma = \gamma + \underbrace{\# + \#}$$

$$\underbrace{\# \#} \gamma = \underbrace{\# \wedge \#} \vee \overline{\# \wedge \#} \wedge \gamma = \gamma \wedge \underbrace{\# \wedge \#} = \# \underbrace{\# \gamma}$$

$$\gamma + o = \gamma = \gamma e$$

$$\begin{aligned} \gamma + o &= \underbrace{\gamma \wedge \bar{o}} \vee \underbrace{\bar{\gamma} \wedge o} = \underbrace{\gamma \wedge e} \vee \underbrace{\bar{\gamma} \wedge o} = \gamma \vee o = \gamma \\ \gamma e &= \gamma \wedge e = \gamma \end{aligned}$$

$$\begin{cases} 2\gamma = o & \gamma = -\gamma \\ \gamma^2 = \gamma \end{cases}$$

$$\begin{aligned} \gamma + \gamma &= \underbrace{\gamma \wedge \bar{\gamma}} \vee \underbrace{\bar{\gamma} \wedge \gamma} = o \vee o = o \\ \gamma^2 &= \gamma \wedge \gamma = \gamma \end{aligned}$$

$$\gamma \# + \# = \# \# = \underbrace{\# + \#}$$

$$\begin{aligned} \gamma \# + \# &= \underbrace{\gamma \wedge \#} + \underbrace{\# \wedge \gamma} = \underbrace{\gamma \wedge \# \wedge \bar{\gamma}} \vee \underbrace{\bar{\gamma} \wedge \# \wedge \gamma} \vee \underbrace{\gamma \wedge \# \wedge \gamma} \vee \underbrace{\bar{\gamma} \wedge \# \wedge \bar{\gamma}} \\ &\stackrel{\text{D1}}{=} \underbrace{\gamma \wedge \# \wedge \bar{\gamma}} \vee \underbrace{\bar{\gamma} \wedge \# \wedge \gamma}_{=o} \vee \underbrace{\bar{\gamma} \wedge \# \wedge \gamma}_{=o} \vee \underbrace{\gamma \wedge \# \wedge \bar{\gamma}} \\ &= \underbrace{\gamma \wedge \# \wedge \bar{\gamma}} \vee \underbrace{\bar{\gamma} \wedge \# \wedge \gamma} = \underbrace{\gamma \wedge \bar{\gamma}} \vee \underbrace{\bar{\gamma} \wedge \gamma} \wedge \# = \underbrace{\gamma + \bar{\gamma}} \wedge \# = \# \# = \gamma + \# \end{aligned}$$