

$$\begin{aligned}
 3.2 \quad f(c, b, a) &= c \wedge b \wedge a \\
 &= c(b \wedge a) \vee \bar{c}(0) \\
 &= c(b(a) \vee \bar{b}(0)) \vee \bar{c}(0) \\
 &= c(b(a(1) \vee \bar{a}(0)) \vee \bar{b}(0)) \vee \bar{c}(0)
 \end{aligned}$$

$$3.4 \quad 1. a \wedge (\bar{b} \vee 0) \Leftrightarrow a \wedge \bar{b}$$

$$2. \bar{b} \wedge ((b \wedge a) \vee (a \wedge \bar{b}))$$

$$\Leftrightarrow \bar{b} \wedge ((b \wedge a) \vee (\bar{b} \wedge a))$$

$$\Leftrightarrow ((\bar{b} \wedge b \wedge a) \vee (\bar{b} \wedge \bar{b} \wedge a))$$

$$\Leftrightarrow (0 \wedge a) \vee (\bar{b} \wedge a)$$

$$\Leftrightarrow 0 \vee (\bar{b} \wedge a)$$

$$\Leftrightarrow \bar{b} \wedge a$$

$$\Leftrightarrow a \wedge \bar{b}$$

$$3. a \wedge \overline{(\bar{b} \wedge \bar{a}) \wedge (\bar{b} \wedge a)}$$

$$\Leftrightarrow a \wedge ((b \vee a) \wedge (b \vee \bar{a}))$$

$$\Leftrightarrow a \wedge ((\bar{b} \wedge \bar{a}) \vee (\bar{b} \wedge a))$$

$$\Leftrightarrow ((\bar{b} \wedge \bar{a} \wedge a) \vee (\bar{b} \wedge a \wedge a))$$

$$\Leftrightarrow ((\bar{b} \wedge 0) \vee (\bar{b} \wedge a \wedge a))$$

$$\Leftrightarrow 0 \vee (\bar{b} \wedge a)$$

$$\Leftrightarrow \bar{b} \wedge a$$

$$\Leftrightarrow a \wedge \bar{b}$$

$$\Rightarrow 1. \equiv 2. \equiv 3. \equiv a \wedge \bar{b}$$