$$
\begin{aligned}
\mathit{rewrite}(\alpha) &= \alpha \qquad \text{where } \alpha \text{ is an atomic proposition}\\
\mathit{rewrite}(\mathit{deadlock}) &= \mathit{deadlock}\\
\mathit{rewrite}(EG\varphi) &= \mathit{rewrite}(\neg AF\,\mathit{rewrite}(\neg\varphi))\\
\mathit{rewrite}(AG\varphi) &= \mathit{rewrite}(\neg EF\,\mathit{rewrite}(\neg\varphi))\\
\mathit{rewrite}(EX\varphi) &= EX\,\mathit{rewrite}(\varphi)\\
\mathit{rewrite}(AX\varphi) &= AX\,\mathit{rewrite}(\varphi)\\
\mathit{rewrite}(\varphi_1 \wedge \cdots \wedge \varphi_n) &= \mathit{rewrite}(\varphi_1) \wedge \cdots \wedge \mathit{rewrite}(\varphi_n)\\
\mathit{rewrite}(\varphi_1 \vee \cdots \vee \varphi_n) &= \mathit{rewrite}(\varphi_1) \vee \cdots \vee \mathit{rewrite}(\varphi_n)
\end{aligned}
$$

$$
\mathit{rewrite}(\neg\varphi) = \begin{cases}
\varphi' & \text{if } \mathit{rewrite}(\varphi) = \neg\varphi'\\
AX\,\mathit{rewrite}(\neg\varphi') & \text{if } \mathit{rewrite}(\varphi) = EX\varphi'\\
EX\,\mathit{rewrite}(\neg\varphi') & \text{if } \mathit{rewrite}(\varphi) = AX\varphi'\\
\mathit{rewrite}((\neg\varphi_1) \wedge \cdots \wedge (\neg\varphi_n)) & \text{if } \varphi = \varphi_1 \vee \cdots \vee \varphi_n\\
\mathit{rewrite}((\neg\varphi_1) \vee \cdots \vee (\neg\varphi_n)) & \text{if } \varphi = \varphi_1 \wedge \cdots \wedge \varphi_n\\
\neg\mathit{rewrite}(\varphi) & \text{otherwise}
\end{cases}
$$

$$
\mathit{rewrite}(EF\varphi) = \begin{cases}
\neg\mathit{deadlock} & \text{if } \mathit{rewrite}(\varphi) = \neg\mathit{deadlock}\\
EF\varphi' & \text{if } \mathit{rewrite}(\varphi) = EF\varphi'\\
\mathit{rewrite}(EF\varphi') & \text{if } \mathit{rewrite}(\varphi) = AF\varphi'\\
\mathit{rewrite}(EF\varphi_2) & \text{if } \mathit{rewrite}(\varphi) = E(\varphi_1 U \varphi_2)\\
\mathit{rewrite}(EF\varphi_2) & \text{if } \mathit{rewrite}(\varphi) = A(\varphi_1 U \varphi_2)\\
\mathit{rewrite}(EF\varphi_1 \vee \cdots \vee EF\varphi_n) & \text{if } \mathit{rewrite}(\varphi) = \varphi_1 \vee \cdots \vee \varphi_n\\
EF\,\mathit{rewrite}(\varphi) & \text{otherwise}
\end{cases}
$$

$$
\mathit{rewrite}(AF\varphi) = \begin{cases}
\neg\mathit{deadlock} & \text{if } \mathit{rewrite}(\varphi) = \neg\mathit{deadlock}\\
EF\varphi' & \text{if } \mathit{rewrite}(\varphi) = EF\varphi'\\
AF\varphi' & \text{if } \mathit{rewrite}(\varphi) = AF\varphi'\\
\mathit{rewrite}(AF\varphi_2) & \text{if } \mathit{rewrite}(\varphi) = A(\varphi_1 U \varphi_2)\\
\mathit{rewrite}((EF\varphi_2) \vee (AF\varphi_1)) & \text{if } \mathit{rewrite}(\varphi) = \varphi_1 \vee EF\varphi_2\\
AF\,\mathit{rewrite}(\varphi) & \text{otherwise}
\end{cases}
$$

$$
\mathit{rewrite}(A(\varphi_1 U \varphi_2)) = \begin{cases}
\neg\mathit{deadlock} & \text{if } \mathit{rewrite}(\varphi_2) = \neg\mathit{deadlock}\\
\mathit{rewrite}(\varphi_2) & \text{if } \mathit{rewrite}(\varphi_1) = \mathit{deadlock}\\
\mathit{rewrite}(AF\varphi_2) & \text{if } \mathit{rewrite}(\varphi_1) = \neg\mathit{deadlock}\\
EF\varphi_3 & \text{if } \mathit{rewrite}(\varphi_2) = EF\varphi_3\\
AF\varphi_3 & \text{if } \mathit{rewrite}(\varphi_2) = AF\varphi_3\\
\mathit{rewrite}((EF\varphi_4) \vee A(\varphi_1 U \varphi_3)) & \text{if } \mathit{rewrite}(\varphi_2) = \varphi_3 \vee EF\varphi_4\\
A(\mathit{rewrite}(\varphi_1) U \mathit{rewrite}(\varphi_2)) & \text{otherwise}
\end{cases}
$$

$$
\mathit{rewrite}(E(\varphi_1 U \varphi_2)) = \begin{cases}
\neg\mathit{deadlock} & \text{if } \mathit{rewrite}(\varphi_2) = \neg\mathit{deadlock}\\
\mathit{rewrite}(\varphi_2) & \text{if } \mathit{rewrite}(\varphi_1) = \mathit{deadlock}\\
\mathit{rewrite}(EF\varphi_2) & \text{if } \mathit{rewrite}(\varphi_1) = \neg\mathit{deadlock}\\
EF\varphi_3 & \text{if } \mathit{rewrite}(\varphi_2) = EF\varphi_3\\
\mathit{rewrite}((EF\varphi_4) \vee E(\varphi_1 U \varphi_3) & \text{if } \mathit{rewrite}(\varphi_2) = \varphi_3 \vee EF\varphi_4\\
E(\mathit{rewrite}(\varphi_1) U \mathit{rewrite}(\varphi_2) & \text{otherwise}
\end{cases}
$$