1. $\neg(A \land B) \equiv \neg A \lor \neg B$

$$\frac{\dfrac{C \vDash \neg A, \neg B}{A, B \vDash \neg C} \text{ Cont.}}{\dfrac{(A \land B) \vDash \neg C}{C \vDash \neg(A \land B)} \text{ Cont.}} \land \text{R} \, 2$$

$$\frac{C \vDash \neg A, \neg B}{C \vDash \neg A \lor \neg B} \, \dot{\lor} \text{R}$$

Set Inclusion

$$\frac{C \vDash \neg A \lor \neg B}{C \vDash \neg(A \land B)} \, I \qquad \qquad \frac{C \vDash \neg(A \land B)}{C \vDash \neg A \lor \neg B} \, I$$

So

$\neg A \lor \neg B \subseteq \neg(A \land B)$

$\neg(A \land B) \subseteq \neg A \lor \neg B$

$\neg(A \land B) = \neg A \lor \neg B$