QUIZ 1

Determine which of the following are legitimate natural deduction proofs.

(1)

$$\cfrac{\cfrac{\cfrac{\overline{A \wedge B}\ ^0}{A}}{\cfrac{A \vee B}{}}}{A \wedge B \to A \vee B}\ ^0$$

(2)

$$\cfrac{\cfrac{A \vee B}{A} \qquad A \to C}{C}$$

(3)

$$\cfrac{\cfrac{\cfrac{(A \to B) \wedge (B \wedge A)}{A \to B} \qquad \overline{A}\ ^0}{B} \qquad \cfrac{\cfrac{(A \to B) \wedge (B \wedge A)}{B \to A} \qquad \overline{B}\ ^0}{A}\ ^0}{A \leftrightarrow B}\ ^0$$