Let $P(s, t)$ be an open sentence, where the domain of the variable s is S and the domain of the variable t is T. The negation of the quantified statement $\forall s \in S, \exists t \in T, P(s, t)$ is

$$\begin{aligned} \sim (\forall s \in S, \exists t \in T, P(s, t)) &\equiv \exists s \in S, \sim (\exists t \in T, P(s, t)) \\ &\equiv \exists s \in S, \forall t \in T, \sim P(s, t); \end{aligned}$$