Refutation of Skolem axiom form

Abstract: "A *Skolem axiom* has the form ∀x,y(φ(x, y)→φ(x,f(x))), where f is a new function symbol introduced to denote a "Skolem function" for φ." The Skolem axiom form is *not* tautologous, hence refuting it. Therefore the Skolem axiom form is a *non* tautologous fragment of the universal logic VŁ4.

We assume the method and apparatus of Meth8/VŁ4 with Tautology as the designated proof value, **F** as contradiction, N as truthity (non-contingency), and C as falsity (contingency). The 16-valued truth table is row-major and horizontal, or repeating fragments of 128-tables, sometimes with table counts, for more variables. (See ersatz-systems.com.)

LET ~ Not, ¬ ; + Or, ∨, ∪, ⊔ ; - Not Or; & And, ∧, ∩, ⊓, ·; \ Not And;
> Imply, greater than, →, ⇒, ↦, ≻, ⊃, ↠ ;
< Not Imply, less than, ∈, ≺, ⊂, ⊬, ⊭, ↞, ≲ ;
= Equivalent, ≡, :=, ⟺, ↔, ≜, ≈, ≃ ; @ Not Equivalent, ≠;
% possibility, for one or some, ∃, ◊, M; # necessity, for every or all, ∀, □, L;
(z=z) T as tautology, ⊤, ordinal 3; (z@z) **F** as contradiction, Ø, Null, ⊥, zero;
(%z>#z) N as non-contingency, Δ, ordinal 1;
(%z<#z) C as contingency, ∇, ordinal 2;
~(y < x) (x ≤ y), (x ⊆ y); (A=B) (A~B); (B>A) (A⊢B); (B>A) (A⊨B).
Note for clarity, we usually distribute quantifiers onto each designated variable.

From: Avigad, J. (2004). Forcing in proof theory. andrew.cmu.edu/user/avigad/Papers/definitions.pdf

5 Point-free model theory
5.3 Eliminating Skolem functions

A *Skolem axiom* has the form ∀x,y(φ(x, y)→φ(x,f(x))), where f is a new function symbol introduced to denote a "Skolem function" for φ. (5.3.1.1)

LET p, q, r, s: φ, x, y, f

(p&(#q&#r))>(p&(#q&(s&#q))) ; TTTT TTCT TTTT TTTT (5.3.1.2)

Remark 5.3.1.2: Eq. 5.3.1.2 is not tautologous, though nearly so. This means the Skolem axiom form is denied.