Resolution to the Banach-Tarski Paradox

This experiment logically tests the Banach-Tarski Paradox as an equivalence and an implication.

At en.wikipedia.org/wiki/Banach%E2%80%93Tarski_paradox , we find after "[s]ome details fleshed out", Step 3:

$$S^2 = \ldots = (E - D) \cup (S^2 - E) = S^2 - D \tag{1.1}$$

We assume the Meth8 apparatus using VŁ4, where the designated proof value is T tautology and F contradiction. The 16-value truth table is presented row major and horizontally.

LET: s S^2; q E; p D; = Equivalent to; ∪ + Or; ⊃ > Imply; - Not Or; & And

s = (((q-p)+(s-q)) = (s-p)) ; FTTF FTTF FTTT FTTT (1.2)

Because Eq. 1.2 is not tautologous, we weaken the argument for the equivalent to connective =, with replacement by the connective > Imply.

s > (((q-p)+(s-q)) > (s-p)) ; TTTT TTTT FTTT FTTT (1.3)

Eq. 1.3 is the equivalent to writing Eq 1.1 in the text symbols as:

$$S^2 \supset (E - D) \cup (S^2 - E) \supset S^2 - D. \tag{1.4}$$

While Eq. 1.3 is relatively less contradictory than Eq.1.2, it remains that both Eq. 1.1 and Eq. 1.4 in the text symbols remain as not tautologous.

This means the Banach-Tarski Paradox, as rendered, is not a paradox, not a theorem, and *not* tautologous.

What follows is that the Von Neumann Paradox on the Euclidean plane is also suspicious as a paradox and possibly not a paradox.