

Proof of Theorem 103b

The theorem to be proved is

$$0 \cdot 0 = 0$$

Suppose the theorem does not hold. Then, with the variables held fixed,

$$(H) \quad [[\neg (0 \cdot 0) = (0)]]$$

Special cases of the hypothesis and previous results:

$$0: \quad \neg 0 \cdot 0 = 0 \quad \text{from } H$$

$$1: \quad 0 \cdot 0 = 0 \quad \text{from } \text{\color{blue}100};0$$

Inferences:

$$2: \quad QEA \quad \text{by}$$

$$0: \quad \neg 0 \cdot 0 = 0$$

$$1: \quad 0 \cdot 0 = 0$$