

Proof of Theorem 134

The theorem to be proved is

$\neg 0$ is a power of two

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

(H) $[[0 \text{ is a power of two}]]$

Special cases of the hypothesis and previous results:

- 0: 0 is a power of two from H
- 1: $\neg 0$ is a power of two $\vee 2 \uparrow x = 0$ from [129](#) $\rightarrow;0:x$
- 2: $\neg 2 \uparrow x = 0$ from [133](#) $;x$

Inferences:

- 3: $2 \uparrow x = 0$ by
 - 0: 0 is a power of two
 - 1: $\neg 0$ is a power of two $\vee 2 \uparrow x = 0$
- 4: *QEA* by
 - 2: $\neg 2 \uparrow x = 0$
 - 3: $2 \uparrow x = 0$