

*Задание:*

$$\vdash (\forall u) \neg s(x + v) \approx x$$

*Решение:*

Пометка 1: решение будет добавлено, если найдется; нет, иначе.

Пометка 2: это тоже не аксиома.

$$\begin{array}{c}
\frac{\vdash x + s(v) \approx s(x + v)}{\vdash s(x + v) \approx x + s(v)} \text{ Пометка 1.} \\
\hline
\frac{\vdash s(x + v) \approx x + s(v) \quad \neg s(x + v) \approx x \vdash \neg s(s(x + v)) \approx x}{\neg s(x + v) \approx x \vdash \neg s(x + s(v)) \approx x} \\
\hline
\frac{\vdash \neg s(x + v) \approx x \rightarrow \neg s(x + s(v)) \approx x}{\vdash (\forall u)(\neg s(x + v) \approx x \rightarrow \neg s(x + s(v)) \approx x)} \\
\hline
\frac{\vdash x + 0 \approx x \quad \text{Пометка 2.}}{\vdash x \approx x + 0} \quad \vdash \neg s(x) \approx x \\
\hline
\frac{\vdash \neg s(x + 0) \approx x \quad \vdash (\forall u)(\neg s(x + v) \approx x \rightarrow \neg s(x + s(v)) \approx x)}{\vdash \neg s(x + 0) \approx x \vdash (\forall u)(\neg s(x + v) \approx x \rightarrow \neg s(x + s(v)) \approx x)} \quad \frac{\neg s(x + 0) \approx x, (\forall u)(\neg s(x + v) \approx x \vdash \neg s(x + s(v)) \approx x \rightarrow (\forall u)\neg s(x + v) \approx x)}{\neg s(x + 0) \approx x \vdash (\forall u)(\neg s(x + v) \approx x \rightarrow \neg s(x + s(v)) \approx x \rightarrow (\forall u)\neg s(x + v) \approx x)} \\
\hline
\frac{\vdash \neg s(x + 0) \approx x}{\vdash (\forall u)\neg s(x + v) \approx x} \quad \frac{}{\vdash (\forall u)\neg s(x + v) \approx x \text{ (сечение)}}$$