

Задание:

1. $(\exists x)(\phi \wedge \psi) \vdash (\exists x)\phi \wedge \psi$
2. $\vdash t \approx t$

Решение:

1. Достаточно доказать для переменных.

$$\vdash x \approx x$$

Аксиома.

2.

$$\frac{\text{(удал. } \wedge\text{)} \frac{\phi \wedge \psi \vdash \phi \wedge \psi}{\phi \wedge \psi \vdash \phi} \quad \text{(удал. } \wedge\text{)} \frac{\phi \wedge \psi \vdash \phi \wedge \psi}{\phi \wedge \psi \vdash \psi}}{\frac{\phi \wedge \psi \vdash (\exists x)\phi \quad \phi \wedge \psi \vdash (\exists x)\psi}{\frac{\phi \wedge \psi \vdash (\exists x)\phi \wedge (\exists x)\psi}{(\exists x)(\phi \wedge \psi) \vdash (\exists x)\phi \wedge (\exists x)\psi}}} \text{ (введ. } \exists \text{ справа)}$$