

Řešení:

1. $\vdash \neg(\exists x(\varphi \wedge \psi))$
 $\vdash \forall x\neg(\varphi \wedge \psi)$
 $\vdash \forall x(\neg\varphi \vee \neg\psi)$
 $\vdash \forall x(\varphi \Rightarrow \neg\psi)$
2. $\vdash \forall x(\varphi \Rightarrow \neg\psi) \Rightarrow (\varphi \Rightarrow \forall x\neg\psi)$
3. $\vdash \varphi \Rightarrow \forall x\neg\psi$
 $\vdash \neg\varphi \vee \forall x\neg\psi$
 $\vdash \neg\varphi \vee \neg\exists x\psi$
4. $\vdash \neg(\varphi \wedge \exists x\psi)$
5. $\vdash \neg(\exists x(\varphi \wedge \psi)) \Rightarrow \neg(\varphi \wedge \exists x\psi)$
6. $\vdash (\neg(\exists x(\varphi \wedge \psi)) \Rightarrow \neg(\varphi \wedge \exists x\psi)) \Rightarrow ((\varphi \wedge \exists x\psi) \Rightarrow (\exists x(\varphi \wedge \psi)))$
7. $\vdash (\varphi \wedge \exists x\psi) \Rightarrow (\exists x(\varphi \wedge \psi))$