

- 18 Formalize and prove the following argument. If it is raining and Jane does not have her umbrella with her, then she is getting wet. Jane is not getting wet. It is raining. Therefore Jane has her umbrella with her.

After trying the question, scroll down to the solution.

Solutions

§	$(rain \wedge \neg umbrella \Rightarrow wet) \wedge \neg wet \wedge rain \Rightarrow umbrella$	context
=	$(\top \wedge \neg umbrella \Rightarrow wet) \wedge \neg wet \wedge rain \Rightarrow umbrella$	context
=	$(\top \wedge \neg \perp \Rightarrow wet) \wedge \neg wet \wedge rain \Rightarrow umbrella$	axiom and identities
=	$wet \wedge \neg wet \wedge rain \Rightarrow umbrella$	noncontradiction
=	$\perp \wedge rain \Rightarrow umbrella$	base laws
=	\top	