∀x~(Gx&Hx), ∃x(Fx&Gx) ├ ∃x(Fx&~Hx)

1	**(1)**	**∀x~(Gx&Hx)**	**A**
2	**(2)**	**∃x(Fx&Gx)**	**A**
___	**(3)**	**~(Ga&Ha)**	**__**
4	**(4)**	**Fa&Ga**	**A**
___	**(5)**	**Ha**	**__**
4	**(6)**	**Ga**	**4 &E**
4	**(7)**	**Fa**	**4 &E**
___	**(8)**	**Ga&Ha**	**5,6 &I**
___	**(9)**	**_____**	**_____**
___	**(10)**	**_____**	**_____**
___	**(11)**	**∃x(Fx&~Hx)**	**10 ∃I**
___	**(12)**	**_____**	**_____**

Suppose that Adam and Dave rob the local bank, and that there are several witnesses to the crime. If anyone talks to the police about the heist, then either Adam or Dave will go to jail. Now suppose that at least one person will talk to the police (though we don't know *whom*). Finally, let's suppose that for whatever reason (perhaps because he has mob ties), there's no way that Dave will go to jail.

Prove that Adam is going to jail.

$\forall x((Px \& Tx) \rightarrow (Ja \vee Jd)), \exists x(Px \& Tx), \sim Jd \vdash Ja$