Logic Work Sheet

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1. Figure out the following truth table

p	q	$\neg p$	$p \wedge q$	$p \vee q$	$\neg p \vee q$	$p \rightarrow q$
T	T					
T	F					
F	T					
F	F					

2. Try to prove the following:
Premises: ①$(P \rightarrow A) \rightarrow G$, ②$\neg G \rightarrow \neg P$
Conclusion: G

3. Try to prove the following:
Premises: ①$\forall x (\exists y\ f(x,y) \rightarrow \exists z\ f(z,x))$, ②$\forall x \exists y\ f(x,y)$
Conclusion: $\forall x \exists y\ f(y,x)$

4. Think about the following:
Premises: ①$f(a,b)$, ②$b = c$
Conclusion: $f(a,c)$