```
card_curry  THM

⊢  (z:(x:A×B(x))→C(z)) ∼ (x:A→y:B(x)→C(<x,y>))
| by Def of <type> ∼ <type>
|
1. A : Type
2. B : A→Type
3. C : (x:A×B(x))→Type
⊢  ∃f:((z:(x:A×B(x))→C(z))→(x:A→y:B(x)→C(<x,y>))),
|   g:((x:A→y:B(x)→C(<x,y>))→(z:(x:A×B(x))→C(z))).
|  InvFuns(z:(x:A×B(x))→C(z);x:A→y:B(x)→C(<x,y>);f;g)
| by Witness: λe,x,y. e(<x,y>) | λe,z. z/x,y. e(x,y)
|
⊢  InvFuns(z:(x:A×B(x))→C(z);x:A→y:B(x)→C(<x,y>)
|          ;λe,x,y. e(<x,y>);λe,z. z/x,y. e(x,y))
| by Analyze THEN Rename-1: e THEN Reduce Concl
|
|\
| 4. e : z:(x:A×B(x))→C(z)
| ⊢  (λz.z/x,y. e(<x,y>)) = e
|   by FunExtensionality THEN Analyze-1 THEN Reduce Concl
|
.\
. 4. e : x:A→y:B(x)→C(<x,y>)
. ⊢  (λx,y. e(x,y)) = e
.   by 2 Times (FunExtensionality THEN Reduce Concl)
END
```