

Inference at \* 1  
of proof for Lemma do-apply-p-lift:

1.  $A : \text{Type}$
2.  $B : \text{Type}$
3.  $P : A \rightarrow \mathbb{P}$
4.  $d : x:A \rightarrow \text{Dec}(P(x))$
5.  $f : \{x:A \mid P(x)\} \rightarrow B$
6.  $x : A$

$\vdash (\uparrow \text{isl}(\text{case } d(x) \text{ of } \text{inl}(a) \Rightarrow \text{inl}(f(x)) \mid \text{inr}(a) \Rightarrow \text{inr } a))$   
 $\Rightarrow (\text{outl}(\text{case } d(x) \text{ of } \text{inl}(a) \Rightarrow \text{inl}(f(x)) \mid \text{inr}(a) \Rightarrow \text{inr } a) = f(x))$   
by (((GenConclAtAddr [1;1;1;1])  
CollapseTHEN (Auto·))·)  
CollapseTHEN (((D (-2)·)  
  
CollapseTHEN (((Reduce 0)  
CollapseTHEN (Auto·))·))·)