Inference at $*$ 1 1 1
of proof for Lemma inv_image_ind_a:

1. T : Type
2. r : $T \to T \to \mathbb{P}$
3. S : Type
4. f : $S \to T$
5. WellFnd{i}(T;x,y.$r(x,y)$)
6. P : $S \to \mathbb{P}$
7. $\forall j{:}S.\ (\forall k{:}S.\ r(f(k),f(j)) \Rightarrow P(k)) \Rightarrow P(j)$
8. S
9. x : T

$\vdash \forall y{:}S.\ (f(y) = x) \Rightarrow P(y)$

by (% Do induction on T using hyp 5 %
((((WFndHypInd 5 (-1))
CollapseTHENM (RepD))·)

CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n
)) (first_tok :t) inil_term)))·)

1:

9. j : T
10. $\forall k{:}T.\ r(k,j) \Rightarrow (\forall y{:}S.\ (f(y) = k) \Rightarrow P(y))$
11. y : S
12. $f(y) = j$

$\vdash P(y)$

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