

Inference at * 1 0 4
of proof for Lemma eq_int_cases_test:

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1. A : Type
2. x : A
3. y : A
4. P : A →  $\mathbb{P}$ 
5. i :  $\mathbb{Z}$ 
6. j :  $\mathbb{Z}$ 
7. P(if (i =0 j) then x else y fi )
8.  $\mathbb{B} \in \text{Type}$ 
9. (i =0 j) ∈  $\mathbb{B}$ 
10.  $\forall bb:\mathbb{B}. ((i =_0 j) = bb) \in \text{Type}$ 
 $\vdash P(\text{if } (i =_0 j) \text{ then } x \text{ else } y \text{ fi })$ 
  by (\p.
    let i = get_int_arg 'i' p
    inlet x = get_term_arg 'x' p

    in let e = get_term_arg 'e' p
    in let A = get_term_arg 'A' p
    in
      AssertAtHyp

      i
      (mk_exists_term (dv x) A (mk_equal_term A e x))
      p)
1: .....assertion..... NILNIL

 $\vdash \exists bb:\mathbb{B}. ((i =_0 j) = bb)$ 
2:

7.  $\exists bb:\mathbb{B}. ((i =_0 j) = bb)$ 
8. P(if (i =0 j) then x else y fi )
9.  $\mathbb{B} \in \text{Type}$ 
10. (i =0 j) ∈  $\mathbb{B}$ 
11.  $\forall bb:\mathbb{B}. ((i =_0 j) = bb) \in \text{Type}$ 
 $\vdash P(\text{if } (i =_0 j) \text{ then } x \text{ else } y \text{ fi })$ 
.

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