Inference at $*$ 1 0 4 2 1
of proof for Lemma eq_int_cases_test:

1. A : Type
2. x : A
3. y : A
4. P : $A \rightarrow \mathbb{P}$
5. i : $\mathbb{Z}$
6. j : $\mathbb{Z}$
7. bb : $\mathbb{B}$
8. $(i =_0 j) = bb$
9. $P(\text{if } (i =_0 j) \text{ then } x \text{ else } y \text{ fi })$
10. $\mathbb{B} \in$ Type
11. $(i =_0 j) \in \mathbb{B}$
12. $\forall bb{:}\mathbb{B}.\ ((i =_0 j) = bb) \in$ Type

$\vdash P(\text{if } (i =_0 j) \text{ then } x \text{ else } y \text{ fi })$

```
by (\p.let A = get_term_arg `A` p
 inlet x = get_term_arg `x` p

   in let e = get_term_arg `e` p
 in
  At (get_term_arg `UH` p)
  (Subst

        (mk_equal_term
       (mk_set_term (dv x) A (mk_equal_term A e x))

          e
       x)
      (get_int_arg `i` p + 2)) p)
```

1: .....equality..... NILNIL

$\vdash (i =_0 j) = bb$

2: .....wf..... NILNIL

13. z : $\{bb{:}\mathbb{B} \mid (i =_0 j) = bb\}$

$\vdash P(\text{if } z \text{ then } x \text{ else } y \text{ fi }) \in \mathbb{P}$

3:

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

$\vdash P(\text{if } (i =_0 j) \text{ then } x \text{ else } y \text{ fi })$

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