```
int_seg_upper_ind  THM

⊢  ∀P:(ℤ→ℤ→Prop), a:ℤ.
|  (∀b:{a...}. (∀c:{a..b⁻}. P(a,c)) ⇒ P(a,b)) ⇒ (∀b:{a...}. P(a,b))
| by Guarding (∀b:{a...}. P(a,b)) Auto
|
1. P : ℤ→ℤ→Prop
2. a : ℤ
3. ∀b:{a...}. (∀c:{a..b⁻}. P(a,c)) ⇒ P(a,b)
⊢  ∀b:{a...}. P(a,b)
| by Enough that
|    ∀k:ℕ, b:{a...}. b-a≤k ⇒ P(a,b)
|      By (Auto THEN BackThru: Hyp:4 Using:[b-a])
|
.....assertion .....
⊢  ∀k:ℕ, b:{a...}. b-a≤k ⇒ P(a,b)  by CompNatInd Concl
|
4. k : ℕ
5. ∀k1:ℕ. k1<k ⇒ (∀b:{a...}. b-a≤k1 ⇒ P(a,b))
6. b : {a...}
7. b-a≤k
⊢  P(a,b)  by Decide: k = 0
|
|\
| 8. k = 0
| ⊢  P(a,b)  by BackThru: Hyp:3
|
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. 8. ¬k = 0
. ⊢  P(a,b)  by BackThru: Hyp:3
. |
. 9. c : {a..b⁻}
. ⊢  P(a,c)  by BackThru: Hyp:5 Using:[k-1]
END
```