```
decidable__all_int_seg  THM

⊢  ∀i,j:ℤ, F:({i..j⁻}→Prop).
|  (∀k:{i..j⁻}. Dec(F(k))) ⇒ Dec(∀k:{i..j⁻}. F(k))  by UnivCD
|
1. i : ℤ
2. j : ℤ
3. F : {i..j⁻}→Prop
4. ∀k:{i..j⁻}. Dec(F(k))
⊢  Dec(∀k:{i..j⁻}. F(k))
| by Inst:
|    Thm* ∀i,j:ℤ, F:({i..j⁻}→Prop).
|         (∀k:{i..j⁻}. Dec(F(k))) ⇒ Dec(∃k:{i..j⁻}. F(k))
|    {decidable__ex_int_seg}
|    Using:[i | j | F(k):= ¬F(k)]
|
5. Dec(∃k:{i..j⁻}. ¬F(k))
⊢  Dec(∀k:{i..j⁻}. F(k))
| by FwdThru:
|    Thm* Dec(P) ⇒ Dec(¬P)    {decidable__not}
|    on [ Hyp:-1 ]
|
6. Dec(¬(∃k:{i..j⁻}. ¬F(k)))
⊢  Dec(∀k:{i..j⁻}. F(k))
| by Rewrite-1 by
|    Thm* ∀Q:(T→Prop). ¬(∃x:T. Q(x)) ⟺ (∀x:T. ¬Q(x))
|    {not_over_exists}
|
7. Dec(∀k:{i..j⁻}. ¬¬F(k))
⊢  Dec(∀k:{i..j⁻}. F(k))
  by Rewrite7 by Thm* Dec(A) ⇒ (¬¬A ⟺ A)    {dneg_elim_a}
END
```