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formula_not_falsifiable_lemma  THM

⊢  ∀F:Formula, a:Assignment. a |≠ ⌈◇⌉F ⟺ a |= F
| by UnivCD THEN Analyze 0
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| 1. F : Formula
| 2. a : Assignment
| ⊢  a |≠ ⌈◇⌉F ⇒ a |= F   by Analyze 0
| |
| 3. a |≠ ⌈◇⌉F
| ⊢  a |= F   by OnHyps [-1;0] UnfoldTopAb THEN Reduce -1
| |
| 3. ◇3(F under a)  = 30
| ⊢  (F under a)  = 32  by GenConcl ((F under a)  = x)
| |
| 4. x : ℕ3
| 5. (F under a)  = x
| ⊢  x = 32  by MoveToEnd -3
| |
| 3. x : ℕ3
| 4. (F under a)  = x
| 5. ◇3(F under a)  = 30
| ⊢   by HypSubst -2 -1
| |
| 5. ◇3x = 30
| ⊢   by ThreeInd 3
| |
| |\
| | 3. (F under a)  = 30
| | 4. ◇330 = 30
| | ⊢  30 = 32  by Reduce -1 THEN ThreeNEQ -1
| |
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| | 3. (F under a)  = 31
| | 4. ◇331 = 30
| | ⊢  31 = 32  by Reduce -1 THEN ThreeNEQ -1
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| . 3. (F under a)  = 32
| . 4. ◇332 = 30
| . ⊢  32 = 32  by Auto
|
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. 1. F : Formula
. 2. a : Assignment
. ⊢  a |≠ ⌈◇⌉F ⇐ a |= F   by UnivCD
. |
. 3. a |= F
. ⊢  a |≠ ⌈◇⌉F  by OnHyps [-1;0] UnfoldTopAb THEN Reduce 0
. |
. 3. (F under a)  = 32
. ⊢  ◇3(F under a)  = 30  by GenConcl ((F under a)  = x)
. |
. 4. x : ℕ3
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. 5. (F under a)  = x
. ⊢  ◇3x = 30  by HypSubst -3 -1 THEN RevHypSubst -1 0
. |
. 5. 32 = x
. ⊢  ◇332 = 30  by Reduce 0
END
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