```
prime_neg  THM

⊢  ∀y:ℤ. prime(-y) ⟺ prime(y)
| by ∀x:ℤ. prime(-x) ⇒ prime(x)  Asserted
|
|\
| .....assertion .....
| ⊢  ∀x:ℤ. prime(-x) ⇒ prime(x)  by Auto
| |
| 1. x : ℤ
| 2. prime(-x)
| ⊢  prime(x)  by SimilarTo Hyp:-1
| |
| |\
| | 2. x = 0
| | ⊢  -x = 0  by Auto
| |
| |\
| | 2. ¬((-x) ∼ 1)
| | ⊢  ¬(x ∼ 1)  by SimilarTo Hyp:-1
| | |
| | 2. x ∼ 1
| | ⊢  (-x) ∼ 1  by Rewrite by Thm*  ∀a:ℤ. (-a) ∼ a    {neg_assoced}
| |
| .\
| . 2. ∀b,c:ℤ. -x | b·c ⇒ -x | b ∨ -x | c
| . ⊢  ∀b,c:ℤ. x | b·c ⇒ x | b ∨ x | c
| .   by Rewrite by
| .      Thm*  ∀a,b:ℤ. a | b ⟺ -a | b    {divides_invar_1}
|
.\
. 1. ∀x:ℤ. prime(-x) ⇒ prime(x)
. ⊢  ∀y:ℤ. prime(-y) ⟺ prime(y)  by GenUnivCD THEN BackThru: Hyp:1
. |
. 2. y : ℤ
. 3. prime(y)
. ⊢  prime(-(-y))  by Subst: -(-y) = y
END
```