```
rem_eq_args_z  THM

⊢  ∀a:ℤ, b:ℤ⁻⁰. |a| = |b| ⇒ (a rem b) = 0
| by SimilarTo ∀a:ℤ, b:ℕ⁺. |a| = |b| ⇒ (a rem b) = 0
|
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| 1. a : ℤ
| 2. b : ℕ⁺
| 3. |a| = |b|
| ⊢  (a rem b) = 0
| | by Inst: Thm* ∀a:ℕ⁺. (a rem a) = 0    {rem_eq_args} Using:[b]
| |    THEN
| |    Decide: 0≤a THEN ElimAbsVal Auto Hyp:3
| |
| 3. -a = b
| 4. (b rem b) = 0
| 5. ¬0≤a
| ⊢  (a rem b) = 0
| | by Inst:
| |    Thm* ∀a:ℤ, n:ℤ⁻⁰. -(a rem n) = ((-a) rem n)    {rem_sym_1}
| |    Using:[a | b]
| |
| 6. -(a rem b) = ((-a) rem b)
| ⊢  (a rem b) = 0  by Rewrite-1 by -a = b
|
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. 1. a : ℤ
. 2. ∀b:ℕ⁺. |a| = |b| ⇒ (a rem b) = 0
. 3. b : ℤ⁻⁰
. 4. |a| = |b|
. ⊢  (a rem b) = 0  by Decide: 0<b
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. |\
. | 5. 0<b
. | ⊢  (a rem b) = 0  by BackThru: Hyp:2
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. .\
. . 5. ¬0<b
. . ⊢  (a rem b) = 0
. . | by Rewrite by
. . |    Thm* ∀a:ℤ, b:ℤ⁻⁰. (a rem -b) = (a rem b)    {rem_sym}
. . |    THEN
. . |    BackThru: Hyp:2
. . |
. . ⊢  |a| = |-b|
. .   by Rewrite← by Thm* ∀i:ℤ. |i| = |-i|    {absval_sym}
END
```