```
rem_gen_base_case  THM

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