Inference at $*$
of proof for Lemma neg_mul_arg_bounds:

$\vdash \forall a, b{:}\mathbb{Z}.\ ((a * b) < 0) \iff (((a < 0)\ \&\ (b > 0)) \vee ((a > 0)\ \&\ (b < 0)))$
by ((((RepD)
CollapseTHENM (InstLemma 'pos_mul_arg_bounds' [-a;b]))·)

CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·

1:

1. $a : \mathbb{Z}$
2. $b : \mathbb{Z}$
3. $(((\text{-}a) * b) > 0) \iff ((((\text{-}a) > 0)\ \&\ (b > 0)) \vee (((\text{-}a) < 0)\ \&\ (b < 0)))$

$\vdash ((a * b) < 0) \iff (((a < 0)\ \&\ (b > 0)) \vee ((a > 0)\ \&\ (b < 0)))$

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http://www.nuprl.org/FDLcontent/p0_942988_/p121_74264_{neg_mul_arg_bounds}.html