Inference at $*$ 1 2 1 1
of proof for Lemma mul_preserves_lt:

1. $a : \mathbb{Z}$
2. $b : \mathbb{Z}$
3. $(a+1) \leq b$
4. $n : \mathbb{Z}$
5. $1 < n$
6. $(((n - 1) * a)+1) \leq ((n - 1) * b)$
7. $(a+1+((n - 1) * a)+1) \leq (b+((n - 1) * b))$

$\vdash (n * a) < (n * b)$

by (Auto_aux (first_nat 1:n) ((first_nat 2:n),(first_nat 3:n)) (first_tok :t) inil_term)

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http://www.nuprl.org/FDLcontent/p0_942988_/p121_75573_{mul_preserves_lt}1_2_1_1.html