

Inference at \* 1 2  
of proof for Lemma mul\_preserves\_lt:

.....upcase..... NILNIL

1.  $a : \mathbb{Z}$   
2.  $b : \mathbb{Z}$   
3.  $a < b$   
4.  $n : \mathbb{Z}$   
5.  $1 < n$   
6.  $((n - 1) * a) < ((n - 1) * b)$   
 $\vdash (n * a) < (n * b)$   
by ((OnMHyps [3;6] (Rewrite (LemmaC 'lt\_to\_le\_rw'))))  
CollapseTHEN ( (Auto\_aux (first\_nat 1:n) ((first\_nat 1:n),(first\_nat 3:n)) (first\_tok :t) inil\_term)))·

1:

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