

Inference at * 1 2 1 2
of proof for Lemma integer sqrt:

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1.  $n : \mathbb{Z}$ 
2.  $0 < n$ 
3.  $r : \mathbb{N}$ 
4.  $(r * r) \leq (n - 1)$ 
5.  $(n - 1) < ((r+1) * (r+1))$ 
6.  $\neg(((r+1) * (r+1)) \leq n)$ 
 $\vdash \exists r:\mathbb{N}. (((r * r) \leq n) \ \& \ (n < ((r+1) * (r+1))))$ 
  by With  $r$  (D 0) THEN Auto
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