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

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. $((r+1) * (r+1)) \leq n$

$\vdash \exists r{:}\mathbb{N}.\ (((r * r) \leq n)\ \&\ (n < ((r+1) * (r+1))))$
  by With r+1 (D 0) THEN Auto'

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http://www.nuprl.org/FDLcontent/p0_963683_/p28_1027382_{integer!sqrt}1_2_1_1.html