

$$\forall b : \{b : \mathbb{Z} \mid 1 < b\}. \forall [P : \mathbb{N} \rightarrow \mathbb{P}]. (P[0] \Rightarrow (\forall i : \mathbb{N}^+. (P[i \div b] \Rightarrow P[i]))) \Rightarrow (\forall i : \mathbb{N}. P[i])$$

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┆  $\forall b : \{b : \mathbb{Z} \mid 1 < b\} . \forall [P : \mathbb{N} \rightarrow \mathbb{P}]. (P[0] \Rightarrow (\forall i : \mathbb{N}^+. (P[i \div b] \Rightarrow P[i]))) \Rightarrow (\forall i : \mathbb{N}. P[i])$ 
|
BY ((GeneralInductionOnNat THENA Auto)
| THEN CaseNat 0 'i'
| THEN Auto
| THEN (Evaluate [i' = (i ÷ b)]1. THENA Auto))
|
1. b: {b:ℤ | 1 < b}
[2]. P: ℕ → ℙ
3. P[0]
4.  $\forall i : \mathbb{N}^+. (P[i \div b] \Rightarrow P[i])$ 
5. i: ℕ
6.  $\forall i1 : \mathbb{N}i. P[i1]$ 
7.  $\neg(i = 0)$ 
8. i': ℤ
9. i' = (i ÷ b)
┆ P[i]
|
BY (InstHyp [[i']1] (-4).
    THEN ElimVar 'i\'
    THEN Auto
    THEN BLemma 'div_mono1' .
    THEN Auto)

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