

t52_partfun1 (TMN- DRzD1kDHPZHTYFKSzN6LqFDUQ51bAgNE)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_tarski X2 X1)) \Rightarrow (r1_tarski (k2_xboole_0 X0 X2) X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. r1_tarski X0 (k2_xboole_0 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((r1_partfun1 X0 X1) \Leftrightarrow (\exists X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \wedge (k2_xboole_0 X0 X1 = X2)))) \quad (3)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. (r1_tarski X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge (v1_relat_1 X1)) \Rightarrow (v1_relat_1 (k2_xboole_0 X0 X1)) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (6)$$

Theorem 1

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((r1_partfun1 X0 X1) \Leftrightarrow (\exists X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \wedge ((r1_tarski X0 X2) \wedge (r1_tarski X1 X2)))))$$