

# t21\_classes1

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Let  $k1\_classes1 : \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k3\_classes1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_ordinal1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_classes1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_setfam\_1 : \iota \Rightarrow \iota$  be given. Let  $k8\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v5\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. X0 \in k1\_ordinal1 X0 \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (r1\_tarski X1 X0) \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0. (v3\_ordinal1 X0) \Rightarrow ((\neg(\neg v4\_ordinal1 X0) \wedge (\forall X1. \\ (v3\_ordinal1 X1) \Rightarrow (X0 \neq k1\_ordinal1 X1))) \wedge (\neg(\exists X1. (v3\_ordinal1 \\ X1) \wedge (X0 = k1\_ordinal1 X1)) \wedge (v4\_ordinal1 X0))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \tag{4}$$

Assume the following.

$$\forall X0. \exists X1. (v3\_ordinal1 X1) \wedge (k3\_classes1 X0 X1 = k1\_classes1 X0) \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (v3\_ordinal1 X2) \Rightarrow ((v4\_ordinal1 \\ X2) \Rightarrow ((X2 = k1\_xboole\_0) \vee ((X1 \in k3\_classes1 X0 X2) \Leftrightarrow (\exists X3. \\ (v3\_ordinal1 X3) \wedge ((X3 \in X2) \wedge (X1 \in k3\_classes1 X0 X3)))))) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} \forall X0 : \iota \Rightarrow o. (\exists X1. (v3\_ordinal1\ X1) \wedge (X0\ X1)) \Rightarrow ( \\ \exists X1. (v3\_ordinal1\ X1) \wedge ((X0\ X1) \wedge (\forall X2. (v3\_ordinal1 \\ X2) \Rightarrow ((X0\ X2) \Rightarrow (r1\_ordinal1\ X1\ X2)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v3\_ordinal1\ X0) \wedge (v3\_ordinal1\ X1)) \Rightarrow ( \\ (r1\_ordinal1\ X0\ X1) \Leftrightarrow (r1\_tarski\ X0\ X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. (v3\_ordinal1\ X1) \Rightarrow (k3\_classes1\ X0\ X1 = k2\_classes1\ X0\ X1) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. (k2\_classes1\ X0\ k1\_xboole\_0 = k1\_tarski\ X0) \wedge ((\forall X1. \\ (v3\_ordinal1\ X1) \Rightarrow (k2\_classes1\ X0\ (k1\_ordinal1\ X1) = k2\_xboole\_0 \\ (k2\_xboole\_0\ (ReplSep\ (toset\ (\lambda X2 : \iota. m1\_subset\_1\ X2\ (k1\_classes1 \\ X0))))\ (\lambda X2 : \iota. \exists X3. (m1\_subset\_1\ X3\ (k1\_classes1\ X0)) \wedge \\ ((X3 \in k2\_classes1\ X0\ X1) \wedge (r1\_tarski\ X2\ X3)))\ (\lambda X2 : \iota. X2)) \\ (ReplSep\ (toset\ (\lambda X2 : \iota. m1\_subset\_1\ X2\ (k1\_classes1\ X0)))) \\ (\lambda X2 : \iota. X2 \in k2\_classes1\ X0\ X1)\ (\lambda X2 : \iota. k9\_setfam\_1\ X2))) \\ (k8\_subset\_1\ (k1\_zfmisc\_1\ (k2\_classes1\ X0\ X1))\ (k9\_setfam\_1\ ( \\ k2\_classes1\ X0\ X1))\ (k1\_classes1\ X0)))) \wedge (\forall X1. (v3\_ordinal1 \\ X1) \Rightarrow (\forall X2. ((v1\_relat\_1\ X2) \wedge ((v1\_funct\_1\ X2) \wedge (v5\_ordinal1 \\ X2)) \Rightarrow (((v4\_ordinal1\ X1) \wedge ((k9\_xtuple\_0\ X2 = X1) \wedge (\forall X3. \\ (v3\_ordinal1\ X3) \Rightarrow ((X3 \in X1) \Rightarrow (k1\_funct\_1\ X2\ X3 = k2\_classes1\ X0\ X3)))))) \Rightarrow \\ ((X1 = k1\_xboole\_0) \vee (k2\_classes1\ X0\ X1 = k3\_xboole\_0\ (k3\_tarski \\ (k10\_xtuple\_0\ X2))\ (k1\_classes1\ X0))))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k1\_tarski\ X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (11)$$

Assume the following.

$$\forall X0. k1\_ordinal1\ X0 = k2\_xboole\_0\ X0\ (k1\_tarski\ X0) \quad (12)$$

Assume the following.

$$\forall X0. (v3\_ordinal1\ X0) \Rightarrow (\forall X1. (m1\_subset\_1\ X1\ X0) \Rightarrow (v3\_ordinal1\ X1)) \quad (13)$$

**Theorem 1**

$$\begin{aligned} \forall X0. \forall X1. \neg (X0 \neq X1) \wedge ((X0 \in k1\_classes1\ X1) \wedge (\forall X2. \\ (v3\_ordinal1\ X2) \Rightarrow (\neg (\neg X0 \in k3\_classes1\ X1\ X2) \wedge (X0 \in k3\_classes1 \\ X1\ (k1\_ordinal1\ X2)))))) \end{aligned}$$