

# l21\_zf\_fund1

(TMFStPbRTgp92UYRCfpcfN23VzH6by1FeJh)

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Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_zf\_lang : \iota$  be given. Let  $r2\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_zf\_fund1 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_wellord2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k2\_zf\_fund1 : \iota$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funct\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (k9\_xtuple\_0 (k5\_relat\_1 X1 X0) = k3\_xboole\_0 (k9\_xtuple\_0 X1) X0) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((v2\_funct\_1 X1) \Rightarrow (v2\_funct\_1 (k5\_relat\_1 X1 X0))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Rightarrow (k3\_xboole\_0 X0 X1 = X0) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (k10\_xtuple\_0 (k5\_relat\_1 X1 X0) = k7\_relat\_1 X1 X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (r2\_wellord2 X0 X1) \Leftrightarrow (r2\_tarski X0 X1) \quad (6)$$

Assume the following.

$$(k1\_relset\_1 k4\_ordinal1 k2\_zf\_fund1 = k4\_ordinal1) \wedge ((k2\_relset\_1 k1\_zf\_lang k2\_zf\_fund1 = k1\_zf\_lang) \wedge ((v2\_funct\_1 k2\_zf\_fund1) \wedge ((v2\_funct\_1 (k2\_funct\_1 k2\_zf\_fund1)) \wedge ((k9\_xtuple\_0 (k2\_funct\_1 k2\_zf\_fund1) = k1\_zf\_lang) \wedge (k10\_xtuple\_0 (k2\_funct\_1 k2\_zf\_fund1) = k4\_ordinal1)))))) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k5\_relat\_1 X0 X1)) \wedge (v1\_funct\_1 (k5\_relat\_1 X0 X1))) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. v1\_relat\_1 (k2\_zfmisc\_1 X0 X1) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X0) \Rightarrow (v1\_relat\_1 (k3\_xboole\_0 X0 X1)) \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X0) \Rightarrow (v1\_relat\_1 (k5\_relat\_1 X0 X1)) \quad (11)$$

Assume the following.

$$(v1\_funct\_1 k2\_zf\_fund1) \wedge ((v1\_funct\_2 k2\_zf\_fund1 k4\_ordinal1 k1\_zf\_lang) \wedge (m1\_subset\_1 k2\_zf\_fund1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k4\_ordinal1 k1\_zf\_lang)))) \quad (12)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k2\_funct\_1 X0)) \wedge (v1\_funct\_1 (k2\_funct\_1 X0))) \quad (13)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_zf\_lang)) \Rightarrow (k4\_zf\_fund1 X0 = k7\_relat\_1 (k2\_funct\_1 k2\_zf\_fund1) X0) \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. (r2\_wellord2 X0 X1) \Leftrightarrow (\exists X2. ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \wedge ((v2\_funct\_1 X2) \wedge ((k9\_xtuple\_0 X2 = X0) \wedge (k10\_xtuple\_0 X2 = X1)))) \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. k3\_xboole\_0 X0 X1 = k3\_xboole\_0 X1 X0 \quad (16)$$

**Theorem 1**

$$\forall X0. ((v1\_finset\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_zf\_lang))) \Rightarrow (r2\_tarski X0 (k4\_zf\_fund1 X0))$$