t31_waybel20 (TMaEnm-CyYJqw73vBsPk4QFQL4BryAPYtwcD)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_yellow\_1 : \iota \Rightarrow o$ be given. Let $v4\_waybel\_3 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5\_orders\_2 : \iota \Rightarrow o$ be given. Let $k3\_waybel\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_yellow\_0 : \iota \Rightarrow o$ be given. Let $l1\_orders\_2 : \iota \Rightarrow o$ be given. Let $k4\_waybel\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_yellow\_0 : \iota \Rightarrow \iota$ be given. Let $k5\_yellow\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_orders\_2 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v5\_orders\_2\ X0) \wedge ((v1\_yellow\_0\ X0) \wedge (l1\_orders\_2\ X0)))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (r1\_orders\_2\ X0\ (k3\_yellow\_0\ X0)\ X1)) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge ((v1\_partfun1\ X1\ X0) \wedge ((v1\_yellow\_1\ X1) \wedge (v4\_waybel\_3\ X1)))))) \Rightarrow ((\forall X2.(m1\_subset\_1\ X2\ X0) \Rightarrow (v5\_orders\_2\ (k3\_waybel\_3\ X0\ X1\ X2))) \Rightarrow (v5\_orders\_2\ (k5\_yellow\_1\ X0\ X1)))) \tag{2}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge ((v1\_partfun1\ X1\ X0) \wedge ((v1\_yellow\_1\ X1) \wedge (v4\_waybel\_3\ X1)))))) \Rightarrow ((\forall X2.(m1\_subset\_1\ X2\ X0) \Rightarrow ((v5\_orders\_2\ (k3\_waybel\_3\ X0\ X1\ X2)) \wedge ((v1\_yellow\_0\ (k3\_waybel\_3\ X0\ X1\ X2)) \wedge (l1\_orders\_2\ (k3\_waybel\_3\ X0\ X1\ X2))))) \Rightarrow (v1\_yellow\_0\ (k5\_yellow\_1\ X0\ X1)))) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v1\_yellow\_1\ X1)\wedge(v4\_waybel\_3\ X1)))))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ (k5\_yellow\_1\ X0\ X1)))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ (k5\_yellow\_1\ X0\ X1)))\Rightarrow((r1\_orders\_2\ (k5\_yellow\_1\ X0\ X1)\ X2\ X3)\Leftrightarrow(\forall X4.(m1\_subset\_1\ X4\ X0)\Rightarrow(r1\_orders\_2\ (k3\_waybel\_3\ X0\ X1\ X4)\ (k4\_waybel\_3\ X0\ X1\ X2\ X4)\ (k4\_waybel\_3\ X0\ X1\ X3\ X4)))))))) \tag{4}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v1\_yellow\_1\ X1)\wedge(v4\_waybel\_3\ X1)))))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((m1\_subset\_1\ X2\ (u1\_struct\_0\ (k5\_yellow\_1\ X0\ X1)))\Leftrightarrow((k9\_xtuple\_0\ X2 = X0)\wedge(\forall X3.(m1\_subset\_1\ X3\ X0)\Rightarrow(m1\_subset\_1\ (k1\_funct\_1\ X2\ X3)\ (u1\_struct\_0\ (k3\_waybel\_3\ X0\ X1\ X3)))))))) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v5\_orders\_2\ X0)\wedge((v1\_yellow\_0\ X0)\wedge(l1\_orders\_2\ X0))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow((r1\_orders\_2\ X0\ X1\ (k3\_yellow\_0\ X0))\Rightarrow(X1 = k3\_yellow\_0\ X0))) \tag{6}$$

Assume the following.

$$\forall X0 : \iota\Rightarrow\iota.\forall X1.\exists X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X1)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X1))))\wedge(\forall X3.(m1\_subset\_1\ X3\ X1)\Rightarrow(k1\_funct\_1\ X2\ X3 = X0\ X3)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v1\_yellow\_1\ X1)\wedge(v4\_waybel\_3\ X1)))))))\wedge((m1\_subset\_1\ X2\ (u1\_struct\_0\ (k5\_yellow\_1\ X0\ X1)))\wedge(m1\_subset\_1\ X3\ X0))))\Rightarrow(k4\_waybel\_3\ X0\ X1\ X2\ X3 = k1\_funct\_1\ X2\ X3) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v1\_yellow\_1\ X1))))))\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow(k3\_waybel\_3\ X0\ X1\ X2 = k1\_funct\_1\ X1\ X2) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow(k1\_relset\_1\ X0\ X1 = k9\_xtuple\_0\ X1) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v1\_yellow\_1\ X1)\wedge(v4\_waybel\_3\ X1))))))\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow(\neg v2\_struct\_0\ (k1\_funct\_1\ X1\ X2)) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v1\_yellow\_1\ X1)\wedge(v4\_waybel\_3\ X1))))))\Rightarrow((\neg v2\_struct\_0\ (k5\_yellow\_1\ X0\ X1))\wedge(v1\_orders\_2\ (k5\_yellow\_1\ X0\ X1))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v1\_yellow\_1\ X1)))))\Rightarrow((v1\_orders\_2\ (k5\_yellow\_1\ X0\ X1))\wedge(l1\_orders\_2\ (k5\_yellow\_1\ X0\ X1))) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v1\_yellow\_1\ X1)\wedge(v4\_waybel\_3\ X1))))))\wedge((m1\_subset\_1\ X2\ (u1\_struct\_0\ (k5\_yellow\_1\ X0\ X1)))\wedge(m1\_subset\_1\ X3\ X0))))\Rightarrow(m1\_subset\_1\ (k4\_waybel\_3\ X0\ X1\ X2\ X3)\ (u1\_struct\_0\ (k3\_waybel\_3\ X0\ X1\ X3))) \tag{14}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0)\Rightarrow(m1\_subset\_1\ (k3\_yellow\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow((v1\_partfun1\ X1\ X0)\Leftrightarrow(k1\_relset\_1\ X0\ X1 = X0)) \tag{16}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v1\_yellow\_1\ X1)\wedge(v4\_waybel\_3\ X1))))))\Rightarrow((\forall X2.(m1\_subset\_1\ X2\ X0)\Rightarrow((v5\_orders\_2\ (k3\_waybel\_3\ X0\ X1\ X2))\wedge((v1\_yellow\_0\ (k3\_waybel\_3\ X0\ X1\ X2))\wedge(l1\_orders\_2\ (k3\_waybel\_3\ X0\ X1\ X2)))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ X0)\Rightarrow(k4\_waybel\_3\ X0\ X1\ (k3\_yellow\_0\ (k5\_yellow\_1\ X0\ X1))\ X2 = k3\_yellow\_0\ (k3\_waybel\_3\ X0\ X1\ X2)))))$$