t21_ideal_1 (TMG14i8YRaYnrkRBJNNrneL4V4XnjgThjsh)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v3\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v2\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_gcd\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $l4\_algstr\_0 : \iota \Rightarrow o$ be given. Let $r2\_gcd\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_gcd\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l5\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l4\_struct\_0 : \iota \Rightarrow o$ be given. Let $l3\_struct\_0 : \iota \Rightarrow o$ be given. Let $l3\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v3\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge ((v2\_ideal\_1\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))) \Rightarrow ((v1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Leftrightarrow (\neg k5\_struct\_0\ X0 \in X1))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((v3\_vectsp\_1\ X0) \wedge (l4\_algstr\_0\ X0))) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow (r2\_gcd\_1\ X0\ X1\ X1) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((v3\_vectsp\_1\ X0) \wedge (l4\_algstr\_0\ X0))) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow ((r2\_gcd\_1\ X0\ X1\ X2) \Leftrightarrow (r1\_gcd\_1\ X0\ X1\ X2)) \tag{4}$$

Assume the following.

$$\forall X0.(l6\_algstr\_0\ X0) \Rightarrow ((l2\_algstr\_0\ X0) \wedge (l5\_algstr\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l5\_algstr\_0\ X0) \Rightarrow ((l4\_algstr\_0\ X0) \wedge (l4\_struct\_0\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.(l4\_algstr\_0\ X0) \Rightarrow ((l3\_struct\_0\ X0) \wedge (l3\_algstr\_0\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l1\_algstr\_0\ X0)) \tag{8}$$

Assume the following.

$$\forall X0.(l3\_struct\_0\ X0) \Rightarrow (m1\_subset\_1\ (k5\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{9}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (m1\_subset\_1\ (k4\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l3\_algstr\_0\ X0)) \Rightarrow (\forall X1.\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((v3\_ideal\_1\ X1\ X0) \Leftrightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.\ (m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow ((X3 \in X1) \Rightarrow (k6\_algstr\_0\ X0\ X3\ X2 \in X1)))))) \tag{11}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l4\_algstr\_0\ X0)) \Rightarrow (\forall X1.\ (m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow ((v1\_gcd\_1\ X1\ X0) \Leftrightarrow (r1\_gcd\_1\ X0\ X1\ (k5\_struct\_0\ X0)))) \tag{12}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l3\_algstr\_0\ X0)) \Rightarrow (\forall X1.\ (m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow ((r1\_gcd\_1\ X0\ X1\ X2) \Leftrightarrow (\exists X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \wedge (X2 = k6\_algstr\_0\ X0\ X1\ X3))))) \tag{13}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v3\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge ((v2\_ideal\_1\ X1\ X0) \wedge ((v3\_ideal\_1\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))))) \Rightarrow ((v1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Leftrightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\neg(v1\_gcd\_1\ X2\ X0) \wedge (X2 \in X1)))))$$