

t73_filter_2 (TMc-
tuHuG9LJSZbRmxeJmEMQQfQkeAk6Tf5K)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v21_lattices : \iota \Rightarrow \iota \Rightarrow o$ 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 $k10_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_nat_lat : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & \quad X0))) \Rightarrow (\forall X1.(m2_nat_lat X1 X0) \Rightarrow (\forall X2.(m1_subset_1 \\ & \quad X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & \quad X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X1)) \Rightarrow (\forall X5. \\ & \quad (m1_subset_1 X5 (u1_struct_0 X1)) \Rightarrow (((X2 = X4) \wedge (X3 = X5)) \Rightarrow ((k3_lattices \\ & \quad X0 X2 X3 = k3_lattices X1 X4 X5) \wedge (k4_lattices X0 X2 X3 = k4_lattices \\ & \quad X1 X4 X5)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & \quad (l3_lattices X0))) \wedge ((\neg v1_xboole_0 X1) \wedge ((v20_lattices X1 X0) \wedge \\ & \quad ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & \quad X0)))))) \Rightarrow (m2_nat_lat (k10_filter_2 X0 X1) X0) \end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & \quad X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v20_lattices X1 X0) \wedge \\ & \quad ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & \quad X0)))))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\ & \quad (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\ & \quad (u1_struct_0 (k10_filter_2 X0 X1)) \Rightarrow (\forall X5.(m1_subset_1 \\ & \quad X5 (u1_struct_0 (k10_filter_2 X0 X1)) \Rightarrow (((X2 = X4) \wedge (X3 = X5)) \Rightarrow (\\ & \quad (k3_lattices X0 X2 X3 = k3_lattices (k10_filter_2 X0 X1) X4 X5) \wedge (\\ & \quad k4_lattices X0 X2 X3 = k4_lattices (k10_filter_2 X0 X1) X4 X5)))))))))) \end{aligned}$$