

t20_absvalue (TMboPnHkAYkDVvT- DMApU1qgMYQNARnKMwggw)

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Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_absvalue : \iota \Rightarrow \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $np_2 : \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_0 : \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow (\forall X3.(v1_xreal_0 X3) \Rightarrow (\neg(\neg r1_xxreal_0 \\ & X1 X0) \wedge ((r1_xxreal_0 X2 X3) \wedge (r1_xxreal_0 (k2_xcmplx_0 X1 X3) (\\ & k2_xcmplx_0 X0 X2)))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(\neg r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X1)))) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow ((v1_xboole_0 X0) \vee ((v2_xxreal_0 X1) \vee (v3_xxreal_0 X0)))))) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X1) \wedge (v2_xxreal_0 X0)))) \quad (5)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge (\neg v3_xxreal_0 X0) \wedge (v3_xxreal_0 X1)))) \quad (6)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 X0 \ k6_numbers = X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xcmplx_0 X0) \wedge ((v1_xcmplx_0 X1) \wedge (v1_xcmplx_0 X2))) \Rightarrow (k2_xcmplx_0 (k2_xcmplx_0 X0 X1) X2 = k2_xcmplx_0 X0 (k2_xcmplx_0 X1 X2)) \quad (8)$$

Assume the following.

$$((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 \ k1_numbers \ k5_numbers)) \wedge ((m1_subset_1 np_2 \ k5_numbers) \wedge (m1_subset_1 np_2 \ k1_numbers)) \quad (9)$$

Assume the following.

$$((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 \ k1_numbers \ k5_numbers)) \wedge ((m1_subset_1 np_1 \ k5_numbers) \wedge (m1_subset_1 np_1 \ k1_numbers)) \quad (10)$$

Assume the following.

$$(m2_subset_1 np_0 \ k1_numbers \ k5_numbers) \wedge ((m1_subset_1 np_0 \ k5_numbers) \wedge (m1_subset_1 np_0 \ k1_numbers)) \quad (11)$$

Assume the following.

$$v1_xboole_0 np_0 \quad (12)$$

Assume the following.

$$k4_xcmplx_0 (k4_xcmplx_0 np_2) = np_2 \quad (13)$$

Assume the following.

$$k4_xcmplx_0 (k4_xcmplx_0 np_1) = np_1 \quad (14)$$

Assume the following.

$$k2_xcmplx_0 (k4_xcmplx_0 np_1) (k4_xcmplx_0 np_1) = k4_xcmplx_0 np_2 \quad (15)$$

Assume the following.

$$k2_xcmplx_0 (k4_xcmplx_0 np_1) np_1 = np_0 \quad (16)$$

Assume the following.

$$k2_xcmplx_0 np_2 (k4_xcmplx_0 np_1) = np_1 \quad (17)$$

Assume the following.

$$k2_xcmplx_0 \ np_2 \ np_1 = np_3 \quad (18)$$

Assume the following.

$$k2_xcmplx_0 \ np_1 \ (k4_xcmplx_0 \ np_2) = k4_xcmplx_0 \ np_1 \quad (19)$$

Assume the following.

$$k2_xcmplx_0 \ np_1 \ (k4_xcmplx_0 \ np_1) = np_0 \quad (20)$$

Assume the following.

$$k2_xcmplx_0 \ np_1 \ np_1 = np_2 \quad (21)$$

Assume the following.

$$k2_xcmplx_0 \ np_1 \ np_0 = np_1 \quad (22)$$

Assume the following.

$$k2_xcmplx_0 \ np_0 \ np_1 = np_1 \quad (23)$$

Assume the following.

$$k2_xcmplx_0 \ np_0 \ np_0 = np_0 \quad (24)$$

Assume the following.

$$r1_xxreal_0 \ (k4_xcmplx_0 \ np_1) \ (k4_xcmplx_0 \ np_1) \quad (25)$$

Assume the following.

$$r1_xxreal_0 \ (k4_xcmplx_0 \ np_1) \ np_1 \quad (26)$$

Assume the following.

$$r1_xxreal_0 \ (k4_xcmplx_0 \ np_1) \ np_0 \quad (27)$$

Assume the following.

$$r1_xxreal_0 \ np_1 \ np_3 \quad (28)$$

Assume the following.

$$r1_xxreal_0 \ np_1 \ np_1 \quad (29)$$

Assume the following.

$$\neg r1_xxreal_0 \ np_1 \ np_0 \quad (30)$$

Assume the following.

$$r1_xxreal_0 \ np_0 \ np_1 \quad (31)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (32)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (33)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(m1_subset_1 X1 k1_numbers))\Rightarrow (k3_real_1 X0 X1 = k2_xcmplx_0 X0 X1) \quad (34)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(k1_real_1 X0 = k4_xcmplx_0 X0) \quad (35)$$

Assume the following.

$$\exists X0.(v1_xboole_0 X0)\wedge(v1_xxreal_0 X0) \quad (36)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(k4_xcmplx_0 (k4_xcmplx_0 X0) = X0) \quad (37)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(k1_real_1 (k1_real_1 X0) = X0) \quad (38)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(v1_xreal_0 (k2_xcmplx_0 X0 X1)) \quad (39)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow((v1_xcmplx_0 (k4_xcmplx_0 X0))\wedge (v1_xreal_0 (k4_xcmplx_0 X0))) \quad (40)$$

Assume the following.

$$\forall X0.(v1_int_1 X0)\Rightarrow((v1_xcmplx_0 (k4_xcmplx_0 X0))\wedge(v1_int_1 (k4_xcmplx_0 X0))) \quad (41)$$

Assume the following.

$$\forall X0.\forall X1.(((v3_xxreal_0 X0)\wedge(v1_xreal_0 X0))\wedge(\neg v2_xxreal_0 X1)\wedge(v1_xreal_0 X1))\Rightarrow(v3_xxreal_0 (k2_xcmplx_0 X1 X0)) \quad (42)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(m1_subset_1 X1 k1_numbers))\Rightarrow (m1_subset_1 (k3_real_1 X0 X1) k1_numbers) \quad (43)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xreal_0 (k1_absvalue X0)) \quad (44)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(((\neg r1_xxreal_0 X0 k6_numbers)\Rightarrow(k1_absvalue X0 = np_1))\wedge(((\neg r1_xxreal_0 k6_numbers X0)\Rightarrow(k1_absvalue X0 = k1_real_1 np_1))\wedge(((r1_xxreal_0 X0 k6_numbers)\wedge(r1_xxreal_0 k6_numbers X0))\Rightarrow(k1_absvalue X0 = k6_numbers)))) \quad (45)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow((r1_xxreal_0 X0 X1)\vee(r1_xxreal_0 X1 X0)) \quad (46)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow(k2_xcmplx_0 X0 X1 = k2_xcmplx_0 X1 X0) \quad (47)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \quad (48)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0)\wedge(v3_xxreal_0 X0))\Rightarrow((\neg v1_xboole_0 X0)\wedge((v1_xxreal_0 X0)\wedge(\neg v2_xxreal_0 X0))) \quad (49)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xxreal_0 X0) \quad (50)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0)\wedge(v2_xxreal_0 X0))\Rightarrow((\neg v1_xboole_0 X0)\wedge((v1_xxreal_0 X0)\wedge(\neg v3_xxreal_0 X0))) \quad (51)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xcmplx_0 X0) \quad (52)$$

Assume the following.

$$\forall X0.(v1_int_1 X0)\Rightarrow(v1_xreal_0 X0) \quad (53)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v1_int_1\ X0) \quad (54)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_numbers)\Rightarrow(v1_xreal_0\ X0) \quad (55)$$

Theorem 1

$$\forall X0.(v1_xreal_0\ X0)\Rightarrow(\forall X1.(v1_xreal_0\ X1)\Rightarrow(r1_xxreal_0\ (k1_absvalue\ (k2_xcmplx_0\ X0\ X1))\ (k3_real_1\ (k2_xcmplx_0\ (k1_absvalue\ X0)\ (k1_absvalue\ X1))\ np_1)))$$