

t22_absvalue (TM-
crB1RXA989JXHNQ9LkcJ9Z4fMWupzXjRk)

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Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k13_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_absvalue : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(\neg r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X1)))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X1) \wedge (v2_xxreal_0 X0)))) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge ((\neg v3_xxreal_0 X0) \wedge (v3_xxreal_0 X1)))) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow ((X0 \neq k6_numbers) \Rightarrow (k3_xcmplx_0 X0 (k7_xcmplx_0 np_1 X0) = np_1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xcmplx_0 X0) \wedge ((v1_xcmplx_0 X1) \wedge (v1_xcmplx_0 X2))) \Rightarrow (k3_xcmplx_0 X0 (k7_xcmplx_0 X1 X2) = k7_xcmplx_0 (k3_xcmplx_0 X0 X1) X2) \quad (6)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$(m2_subset_1 \ np_0 \ k1_numbers \ k5_numbers) \wedge ((m1_subset_1 \ np_0 \ k5_numbers) \wedge (m1_subset_1 \ np_0 \ k1_numbers)) \quad (8)$$

Assume the following.

$$v1_xboole_0 \ np_0 \quad (9)$$

Assume the following.

$$k3_xcmplx_0 \ np_1 \ np_1 = np_1 \quad (10)$$

Assume the following.

$$k7_xcmplx_0 \ np_1 \ (k4_xcmplx_0 \ np_1) = k4_xcmplx_0 \ np_1 \quad (11)$$

Assume the following.

$$k7_xcmplx_0 \ np_1 \ np_1 = np_1 \quad (12)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (13)$$

Assume the following.

$$\forall X0. (m1_subset_1 \ X0 \ k1_numbers) \Rightarrow (k1_real_1 \ X0 = k4_xcmplx_0 \ X0) \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xcmplx_0 \ X0) \wedge (v1_xcmplx_0 \ X1)) \Rightarrow (k13_complex1 \ X0 \ X1 = k7_xcmplx_0 \ X0 \ X1) \quad (15)$$

Assume the following.

$$\exists X0. (v1_xboole_0 \ X0) \wedge ((v1_xcmplx_0 \ X0) \wedge ((v1_xxreal_0 \ X0) \wedge (v1_xreal_0 \ X0))) \quad (16)$$

Assume the following.

$$\exists X0. (v1_xcmplx_0 \ X0) \wedge ((v1_xxreal_0 \ X0) \wedge ((v3_xxreal_0 \ X0) \wedge (v1_xreal_0 \ X0))) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0 \ X0) \wedge (v1_xreal_0 \ X1)) \Rightarrow (v1_xreal_0 \ (k7_xcmplx_0 \ X0 \ X1)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v3_xxreal_0 X0)\wedge(v1_xreal_0 X0))\wedge((\neg v3_xxreal_0 X1)\wedge(v1_xreal_0 X1)))\Rightarrow(\neg v3_xxreal_0 (k7_xcmplx_0 X0 X1)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v3_xxreal_0 X0)\wedge(v1_xreal_0 X0))\wedge((\neg v2_xxreal_0 X1)\wedge(v1_xreal_0 X1)))\Rightarrow(\neg v2_xxreal_0 (k7_xcmplx_0 X0 X1)) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_xxreal_0 X0)\wedge(v1_xreal_0 X0))\wedge((\neg v3_xxreal_0 X1)\wedge(v1_xreal_0 X1)))\Rightarrow(\neg v2_xxreal_0 (k3_xcmplx_0 X1 X0)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_xxreal_0 X0)\wedge(v1_xreal_0 X0))\wedge((\neg v3_xxreal_0 X1)\wedge(v1_xreal_0 X1)))\Rightarrow(\neg v2_xxreal_0 (k3_xcmplx_0 X0 X1)) \quad (22)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xreal_0 (k1_absvalue X0)) \quad (23)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(((\neg r1_xxreal_0 X0 k6_numbers)\Rightarrow(k1_absvalue X0 = np_1))\wedge(((\neg r1_xxreal_0 k6_numbers X0)\Rightarrow(k1_absvalue X0 = k1_real_1 np_1))\wedge(((r1_xxreal_0 X0 k6_numbers)\wedge(r1_xxreal_0 k6_numbers X0))\Rightarrow(k1_absvalue X0 = k6_numbers)))) \quad (24)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0)\wedge(v3_xxreal_0 X0))\Rightarrow((\neg v1_xboole_0 X0)\wedge((v1_xxreal_0 X0)\wedge(\neg v2_xxreal_0 X0))) \quad (25)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0)\wedge((v1_xxreal_0 X0)\wedge(\neg v3_xxreal_0 X0)))\Rightarrow((v1_xxreal_0 X0)\wedge(v2_xxreal_0 X0)) \quad (26)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xxreal_0 X0) \quad (27)$$

Assume the following.

$$\forall X0.((v1_xreal_0 X0) \wedge (v2_xreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xreal_0 X0) \wedge (\neg v3_xreal_0 X0))) \quad (28)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (29)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 \ k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (30)$$

Theorem 1

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (k13_complex1 \ np_1 (k1_absvalue X0) = k1_absvalue (k13_complex1 \ np_1 X0))$$