# t21_absvalue (TMP4YT6TcAD9raed33EqtzXMgg5gjh427Aw)

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Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $k6\_numbers : \iota$ be given. Let $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_absvalue : \iota \Rightarrow \iota$ be given. Let $k13\_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $v1\_xcmplx\_0 : \iota \Rightarrow o$ be given. Let $k7\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $np\_\_3 : \iota$ 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 $k5\_xcmplx\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_xcmplx\_0 : \iota \Rightarrow \iota$ be given. Let $np\_\_0 : \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_real\_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xreal\_0\ X1) \Rightarrow (k1\_absvalue\ (k3\_xcmplx\_0\ X0\ X1) = k3\_xcmplx\_0\ (k1\_absvalue\ X0)\ (k1\_absvalue\ X1))) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow ((X0 \neq k6\_numbers) \Rightarrow (k3\_xcmplx\_0\ X0\ (k7\_xcmplx\_0\ np\_\_1\ X0) = np\_\_1)) \tag{2}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_3) \wedge (m2\_subset\_1\ np\_\_3\ k1\_numbers\ k5\_numbers)) \wedge ((m1\_subset\_1\ np\_\_3\ k5\_numbers) \wedge (m1\_subset\_1\ np\_\_3\ k1\_numbers)) \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow (k7\_xcmplx\_0\ np\_\_1\ X0 = k5\_xcmplx\_0\ X0) \tag{4}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_1) \wedge (m2\_subset\_1\ np\_\_1\ k1\_numbers\ k5\_numbers)) \wedge ((m1\_subset\_1\ np\_\_1\ k5\_numbers) \wedge (m1\_subset\_1\ np\_\_1\ k1\_numbers)) \tag{5}$$

Assume the following.

$$k2\_xcmplx\_0\ np\_\_1\ (k4\_xcmplx\_0\ np\_\_1) = np\_\_0 \tag{6}$$

Assume the following.

$$\neg r1\_xxreal\_0\ np\_\_3\ np\_\_0 \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow(k13\_complex1\ X0\ X1 = k7\_xcmplx\_0\ X0\ X1) \tag{8}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(k1\_absvalue\ (k1\_absvalue\ X0) = k1\_absvalue\ X0) \tag{9}$$

Assume the following.

$$k2\_xcmplx\_0\ np\_\_1\ (k4\_xcmplx\_0\ np\_\_1) = k6\_numbers \tag{10}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow((v1\_xcmplx\_0\ (k5\_xcmplx\_0\ X0))\wedge(v1\_xreal\_0\ (k5\_xcmplx\_0\ X0))) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(((\neg r1\_xxreal\_0\ X0\ k6\_numbers)\Rightarrow(k1\_absvalue\ X0 = np\_\_1))\wedge(((\neg r1\_xxreal\_0\ k6\_numbers\ X0)\Rightarrow(k1\_absvalue\ X0 = k1\_real\_1\ np\_\_1))\wedge(((r1\_xxreal\_0\ X0\ k6\_numbers)\wedge(r1\_xxreal\_0\ k6\_numbers\ X0))\Rightarrow(k1\_absvalue\ X0 = k6\_numbers)))) \tag{12}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xcmplx\_0\ X0) \tag{13}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \tag{14}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xcmplx\_0\ X0) \tag{15}$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow((X0\neq k6\_numbers)\Rightarrow(k3\_xcmplx\_0\ (k1\_absvalue\ X0)\ (k1\_absvalue\ (k13\_complex1\ np\_\_1\ X0)) = np\_\_1))$$