

## t10\_absvalue

(TMYbchMgxbqt5FJR719sMaYSzF46bNnxvxb)

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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  $k13\_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k6\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k18\_complex1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k17\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k7\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k16\_complex1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 X0) \Rightarrow (\forall X1. (v1\_xcmplx\_0 X1) \Rightarrow (k13\_complex1 (k17\_complex1 X0) (k17\_complex1 X1) = k17\_complex1 (k13\_complex1 X0 X1))) \quad (2)$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 X0) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k17\_complex1 X0)) \quad (3)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. (v1\_xreal\_0 X1) \Rightarrow (((r1\_xxreal\_0 k6\_numbers X0) \wedge (r1\_xxreal\_0 k6\_numbers X1)) \Rightarrow (k6\_square\_1 (k7\_xcmplx\_0 X0 X1) = k7\_xcmplx\_0 (k6\_square\_1 X0) (k6\_square\_1 X1)))) \quad (4)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k1\_numbers) \Rightarrow (k7\_square\_1 X0 = k6\_square\_1 X0) \quad (5)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k18\_complex1 X0 = k16\_complex1 X0) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k17\_complex1 X0 = k16\_complex1 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (k13\_complex1 X0 X1 = k7\_xcmplx\_0 X0 X1) \quad (9)$$

Assume the following.

$$\exists X0.(v1\_xboole\_0 X0) \wedge ((v1\_xcmplx\_0 X0) \wedge ((v1\_xxreal\_0 X0) \wedge (v1\_xreal\_0 X0))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (v1\_xreal\_0 (k7\_xcmplx\_0 X0 X1)) \quad (11)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xreal\_0 (k6\_square\_1 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (m1\_subset\_1 (k18\_complex1 X0) k1\_numbers) \quad (14)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (v1\_xreal\_0 (k16\_complex1 X0)) \quad (15)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (((r1\_xxreal\_0 k6\_numbers X0) \Rightarrow (k16\_complex1 X0 = X0)) \wedge ((\neg r1\_xxreal\_0 k6\_numbers X0) \Rightarrow (k16\_complex1 X0 = k4\_xcmplx\_0 X0))) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (r1\_xxreal\_0 X0 X1) \vee (r1\_xxreal\_0 X1 X0) \quad (17)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (18)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (19)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((\neg r1\_xreal\_0 \\ (k13\_complex1 X0 X1) k6\_numbers) \Rightarrow (k6\_square\_1 (k13\_complex1 \\ X0 X1) = k13\_complex1 (k7\_square\_1 (k18\_complex1 X0)) (k7\_square\_1 \\ (k18\_complex1 X1)))))) \end{aligned}$$