# t22_gr_cy_3 (TMbg28mrfZ3rB46qKADkmpcg4nToqyLyPwN)

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Let $k1\_gr\_cy\_3 : \iota \Rightarrow \iota$ be given. Let $np\_\_11 : \iota$ be given. Let $k4\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_23 : \iota$ be given. Let $np\_\_89 : \iota$ be given. Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_xcmplx\_0 : \iota \Rightarrow o$ be given. Let $k1\_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $np\_\_8 : \iota$ 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 $np\_\_3 : \iota$ be given. Let $np\_\_2 : \iota$ be given. Let $np\_\_2048 : \iota$ be given. Let $k4\_xcmplx\_0 : \iota \Rightarrow \iota$ be given. Let $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $np\_\_256 : \iota$ be given. Let $np\_\_2047 : \iota$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $k2\_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13\_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\forall X2. (v1\_xcmplx\_0\ X2) \Rightarrow (k1\_newton\ X2\ (k2\_xcmplx\_0\ X0\ X1) = k3\_xcmplx\_0\ (k1\_newton\ X2\ X0)\ (k1\_newton\ X2\ X1)))) \tag{1}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_8) \wedge (m2\_subset\_1\ np\_\_8\ k1\_numbers\ k5\_numbers)) \wedge ((m1\_subset\_1\ np\_\_8\ k5\_numbers) \wedge (m1\_subset\_1\ np\_\_8\ k1\_numbers)) \tag{2}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_89) \wedge (m2\_subset\_1\ np\_\_89\ k1\_numbers\ k5\_numbers)) \wedge ((m1\_subset\_1\ np\_\_89\ k5\_numbers) \wedge (m1\_subset\_1\ np\_\_89\ k1\_numbers)) \tag{3}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_3) \wedge (m2\_subset\_1\ np\_\_3\ k1\_numbers\ k5\_numbers)) \wedge ((m1\_subset\_1\ np\_\_3\ k5\_numbers) \wedge (m1\_subset\_1\ np\_\_3\ k1\_numbers)) \tag{4}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_2) \wedge (m2\_subset\_1\ np\_\_2\ k1\_numbers\ k5\_numbers)) \wedge ((m1\_subset\_1\ np\_\_2\ k5\_numbers) \wedge (m1\_subset\_1\ np\_\_2\ k1\_numbers)) \tag{5}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_23)\wedge(m2\_subset\_1\ np\_\_23\ k1\_numbers\ k5\_numbers))\wedge((m1\_subset\_1\ np\_\_23\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_23\ k1\_numbers)) \tag{6}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_2048)\wedge(m2\_subset\_1\ np\_\_2048\ k1\_numbers\ k5\_numbers))\wedge((m1\_subset\_1\ np\_\_2048\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_2048\ k1\_numbers)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow(k2\_xcmplx\_0\ X0\ (k4\_xcmplx\_0\ X1) = k6\_xcmplx\_0\ X0\ X1) \tag{8}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_11)\wedge(m2\_subset\_1\ np\_\_11\ k1\_numbers\ k5\_numbers))\wedge((m1\_subset\_1\ np\_\_11\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_11\ k1\_numbers)) \tag{9}$$

Assume the following.

$$k4\_xcmplx\_0\ (k4\_xcmplx\_0\ np\_\_2) = np\_\_2 \tag{10}$$

Assume the following.

$$k4\_xcmplx\_0\ (k4\_xcmplx\_0\ np\_\_1) = np\_\_1 \tag{11}$$

Assume the following.

$$k3\_xcmplx\_0\ np\_\_256\ np\_\_8 = np\_\_2048 \tag{12}$$

Assume the following.

$$k3\_xcmplx\_0\ np\_\_23\ np\_\_89 = np\_\_2047 \tag{13}$$

Assume the following.

$$k6\_xcmplx\_0\ np\_\_2\ np\_\_3 = k4\_xcmplx\_0\ np\_\_1 \tag{14}$$

Assume the following.

$$k2\_xcmplx\_0\ np\_\_8\ np\_\_3 = np\_\_11 \tag{15}$$

Assume the following.

$$k2\_xcmplx\_0\ np\_\_2048\ (k4\_xcmplx\_0\ np\_\_1) = np\_\_2047 \tag{16}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{17}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_numbers)\wedge(v7\_ordinal1\ X1))\Rightarrow(k4\_nat\_1\ X0\ X1 = k3\_xcmplx\_0\ X0\ X1) \tag{18}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k1\_numbers)\wedge(v7\_ordinal1\ X1))\Rightarrow(k2\_newton\ X0\ X1 = k1\_newton\ X0\ X1) \tag{19}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_numbers)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\Rightarrow(k13\_newton\ X0\ X1 = k1\_newton\ X0\ X1) \tag{20}$$

Assume the following.

$$k13\_newton\ np\_\_2\ np\_\_8 = np\_\_256 \tag{21}$$

Assume the following.

$$k13\_newton\ np\_\_2\ np\_\_3 = np\_\_8 \tag{22}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0\ X0)\wedge(v1\_xreal\_0\ X1))\Rightarrow(v1\_xreal\_0\ (k6\_xcmplx\_0\ X0\ X1)) \tag{23}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow((v1\_xcmplx\_0\ (k4\_xcmplx\_0\ X0))\wedge(v1\_xreal\_0\ (k4\_xcmplx\_0\ X0))) \tag{24}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(k1\_gr\_cy\_3\ X0 = k6\_xcmplx\_0\ (k2\_newton\ np\_\_2\ X0)\ np\_\_1) \tag{25}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \tag{26}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xcmplx\_0\ X0) \tag{27}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \tag{28}$$

**Theorem 1** $k1\_gr\_cy\_3\ np\_\_11 = k4\_nat\_1\ np\_\_23\ np\_\_89$.