t9_nagata_2 (TMa47aSskuZAuUErkhRP3RkYGEYCUrwGr9c)

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Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $r1\_pcomps\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_nagata\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))) \Rightarrow ((r1\_nagata\_1\ X0\ X1) \Leftrightarrow (\forall X2.(m1\_subset\_1\ X2\ X0) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ X0) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ X0) \Rightarrow ((k1\_metric\_1\ X0\ X0\ X1\ X2\ X2 = k6\_numbers) \wedge ((k1\_metric\_1\ X0\ X0\ X1\ X2\ X3 = k1\_metric\_1\ X0\ X0\ X1\ X3\ X2) \wedge (r1\_xxreal\_0\ (k1\_metric\_1\ X0\ X0\ X1\ X2\ X4)\ (k7\_real\_1\ (k1\_metric\_1\ X0\ X0\ X1\ X2\ X3)\ (k1\_metric\_1\ X0\ X0\ X1\ X3\ X4)))))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))) \Rightarrow ((r1\_pcomps\_1\ X0\ X1) \Leftrightarrow (\forall X2.(m1\_subset\_1\ X2\ X0) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ X0) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ X0) \Rightarrow (((k1\_metric\_1\ X0\ X0\ X1\ X2\ X3 = k6\_numbers) \Rightarrow (X2 = X3)) \wedge (((X2 = X3) \Rightarrow (k1\_metric\_1\ X0\ X0\ X1\ X2\ X3 = k6\_numbers)) \wedge ((k1\_metric\_1\ X0\ X0\ X1\ X2\ X3 = k1\_metric\_1\ X0\ X0\ X1\ X3\ X2) \wedge (r1\_xxreal\_0\ (k1\_metric\_1\ X0\ X0\ X1\ X2\ X4)\ (k7\_real\_1\ (k1\_metric\_1\ X0\ X0\ X1\ X2\ X3)\ (k1\_metric\_1\ X0\ X0\ X1\ X3\ X4)))))))))) \tag{2}$$

Theorem 1

$$\forall X0.\forall X1.((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))) \Rightarrow ((r1\_pcomps\_1\ X0\ X1) \Rightarrow (r1\_nagata\_1\ X0\ X1))$$