

# t19\_cfuncdom

(TMRbUBpgmfDH3TQ4NtVg4Je6g3p43vxowok)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_numbers : \iota$  be given. Let  $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funcsdom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_cfuncdom : \iota \Rightarrow \iota$  be given. Let  $k2\_funcsdom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_cfuncdom : \iota \Rightarrow \iota$  be given. Let  $k1\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_cfuncdom : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_complfld : \iota$  be given. Let  $k5\_complex1 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_complex1 : \iota$  be given. Assume the following.

$$k4\_struct\_0 \ k1\_complfld = k5\_complex1 \tag{1}$$

Assume the following.

$$k4\_struct\_0 \ k1\_complfld = k6\_numbers \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (\neg v1\_xboole\_0 \ X2) \Rightarrow (\forall X3. \\ & (m2\_funct\_2 \ X3 \ X2 \ k2\_numbers \ (k9\_funct\_2 \ X2 \ k2\_numbers)) \Rightarrow (\forall X4. \\ & (m2\_funct\_2 \ X4 \ X2 \ k2\_numbers \ (k9\_funct\_2 \ X2 \ k2\_numbers)) \Rightarrow (((X0 \in \\ & X2) \wedge ((X1 \in X2) \wedge (\forall X5. (X5 \in X2) \Rightarrow (((X5 = X0) \Rightarrow (k1\_funct\_1 \ X3 \\ & X5 = k6\_complex1)) \wedge ((X5 \neq X0) \Rightarrow (k1\_funct\_1 \ X3 \ X5 = k6\_numbers)))))) \wedge \\ & (\forall X5. (X5 \in X2) \Rightarrow (((X5 = X0) \Rightarrow (k1\_funct\_1 \ X4 \ X5 = k6\_numbers)) \wedge \\ & ((X5 \neq X0) \Rightarrow (k1\_funct\_1 \ X4 \ X5 = k6\_complex1)))))) \Rightarrow ((X0 = X1) \vee (\forall X5. \\ & (m1\_subset\_1 \ X5 \ k2\_numbers) \Rightarrow (\forall X6. (m1\_subset\_1 \ X6 \ k2\_numbers) \Rightarrow \\ & ((r2\_funct\_2 \ X2 \ k2\_numbers \ (k1\_funcsdom \ X2 \ k2\_numbers \ (k1\_cfuncdom \\ & X2) \ (k2\_funcsdom \ X2 \ k2\_numbers \ k2\_numbers \ (k9\_funct\_2 \ X2 \ k2\_numbers) \\ & (k3\_cfuncdom \ X2) \ (k1\_domain\_1 \ k2\_numbers \ (k9\_funct\_2 \ X2 \ k2\_numbers) \\ & X5 \ X3)) \ (k2\_funcsdom \ X2 \ k2\_numbers \ k2\_numbers \ (k9\_funct\_2 \ X2 \ k2\_numbers) \\ & (k3\_cfuncdom \ X2) \ (k1\_domain\_1 \ k2\_numbers \ (k9\_funct\_2 \ X2 \ k2\_numbers) \\ & X6 \ X4))) \ (k4\_cfuncdom \ X2)) \Rightarrow ((X5 = k5\_complex1) \wedge (X6 = k5\_complex1)))))) \tag{3} \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\exists X2. (m2\_funct\_2 \\
& X2 X1 k2\_numbers (k9\_funct\_2 X1 k2\_numbers)) \wedge (\exists X3. (m2\_funct\_2 \\
& X3 X1 k2\_numbers (k9\_funct\_2 X1 k2\_numbers)) \wedge (\forall X4. (X4 \in \\
& X1) \Rightarrow (((X4 = X0) \Rightarrow (k1\_funct\_1 X2 X4 = k6\_complex1)) \wedge ((X4 \neq X0) \Rightarrow (k1\_funct\_1 \\
& X2 X4 = k6\_numbers)))) \wedge (\forall X4. (X4 \in X1) \Rightarrow (((X4 = X0) \Rightarrow (k1\_funct\_1 \\
& X3 X4 = k6\_numbers)) \wedge ((X4 \neq X0) \Rightarrow (k1\_funct\_1 X3 X4 = k6\_complex1)))))) \\
& \hspace{15em} (4)
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (\neg v1\_xboole\_0 X2) \Rightarrow (\neg (X0 \in X2) \wedge \\
& ((X1 \in X2) \wedge ((X0 \neq X1) \wedge (\forall X3. (m2\_funct\_2 X3 X2 k2\_numbers ( \\
& k9\_funct\_2 X2 k2\_numbers)) \Rightarrow (\forall X4. (m2\_funct\_2 X4 X2 k2\_numbers \\
& (k9\_funct\_2 X2 k2\_numbers)) \Rightarrow (\exists X5. (m1\_subset\_1 X5 k2\_numbers) \wedge \\
& (\exists X6. (m1\_subset\_1 X6 k2\_numbers) \wedge ((r2\_funct\_2 X2 k2\_numbers \\
& (k1\_funcsdom X2 k2\_numbers (k1\_cfuncdom X2) (k2\_funcsdom X2 k2\_numbers \\
& k2\_numbers (k9\_funct\_2 X2 k2\_numbers) (k3\_cfuncdom X2) (k1\_domain\_1 \\
& k2\_numbers (k9\_funct\_2 X2 k2\_numbers) X5 X3)) (k2\_funcsdom X2 k2\_numbers \\
& k2\_numbers (k9\_funct\_2 X2 k2\_numbers) (k3\_cfuncdom X2) (k1\_domain\_1 \\
& k2\_numbers (k9\_funct\_2 X2 k2\_numbers) X6 X4))) (k4\_cfuncdom X2)) \wedge \\
& (\neg (X5 = k6\_numbers) \wedge (X6 = k6\_numbers)))))))))
\end{aligned}$$