

t11\_card\_4  
(TMUrMHqQ5Tv6opYYgYqyixwSzzFmtb913tM)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v4\_card\_3 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_card\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_card\_1 X0) \Rightarrow (\forall X1.(v1\_card\_1 X1) \Rightarrow (\forall X2. \\ & ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow (((r1\_ordinal1 (k1\_card\_1 \\ & (k9\_xtuple\_0 X2)) X0) \wedge (\forall X3.(X3 \in k9\_xtuple\_0 X2) \Rightarrow (r1\_ordinal1 \\ & (k1\_card\_1 (k1\_funct\_1 X2 X3)) X1)))) \Rightarrow (r1\_ordinal1 (k1\_card\_1 \\ & (k3\_card\_3 X2)) (k2\_card\_2 X0 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$k2\_card\_2 k4\_ordinal1 k4\_ordinal1 = k4\_ordinal1 \quad (2)$$

Assume the following.

$$v1\_card\_1 k4\_ordinal1 \quad (3)$$

Assume the following.

$$\forall X0.(v4\_card\_3 X0) \Leftrightarrow (r1\_ordinal1 (k1\_card\_1 X0) k4\_ordinal1) \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (((v4\_card\_3 ( \\ & k9\_xtuple\_0 X0)) \wedge (\forall X1.(X1 \in k9\_xtuple\_0 X0) \Rightarrow (v4\_card\_3 \\ & (k1\_funct\_1 X0 X1)))) \Rightarrow (v4\_card\_3 (k3\_card\_3 X0))) \end{aligned}$$