

t11\_facirc\_1  
(TMTnota2nKA8URijUbcLZfCDf7a2CYv5MER)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v11\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_msafree2 : \iota \Rightarrow o$  be given. Let  $l1\_msualg\_1 : \iota \Rightarrow o$  be given. Let  $v4\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_msafree2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k6\_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{1}$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2\_struct\_0 \\ & X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (v2\_msafree2 X0) \wedge (l1\_msualg\_1 X0))) \wedge \\ & (((v4\_msualg\_1 X1 X0) \wedge (v4\_msafree2 X1 X0) \wedge (l3\_msualg\_1 X1 X0))) \wedge \\ & ((m1\_subset\_1 X2 (k4\_card\_3 (u3\_msualg\_1 X0 X1))) \wedge (v7\_ordinal1 \\ & X3))) \Rightarrow (m1\_subset\_1 (k5\_facirc\_1 X0 X1 X2 X3) (k4\_card\_3 (u3\_msualg\_1 \\ & X0 X1))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_msafree2 \\
& \quad X0) \wedge (l1\_msualg\_1 X0)))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (( \\
& \quad v4\_msafree2 X1 X0) \wedge (l3\_msualg\_1 X1 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& \quad X2 (k4\_card\_3 (u3\_msualg\_1 X0 X1))) \Rightarrow (\forall X3.(v7\_ordinal1 \\
& \quad X3) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (k4\_card\_3 (u3\_msualg\_1 X0 X1))) \Rightarrow \\
& \quad ((X4 = k5\_facirc\_1 X0 X1 X2 X3) \Leftrightarrow (\exists X5.((v1\_funct\_1 X5) \wedge (( \\
& \quad v1\_funct\_2 X5 k5\_numbers (k4\_card\_3 (u3\_msualg\_1 X0 X1))) \wedge (m1\_subset\_1 \\
& \quad X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_card\_3 (u3\_msualg\_1 \\
& \quad X0 X1)))))) \wedge ((X4 = k8\_nat\_1 (k4\_card\_3 (u3\_msualg\_1 X0 X1)) X5 \\
& \quad X3) \wedge ((k8\_nat\_1 (k4\_card\_3 (u3\_msualg\_1 X0 X1)) X5 k6\_numbers = \\
& \quad X2) \wedge (\forall X6.(v7\_ordinal1 X6) \Rightarrow (k8\_nat\_1 (k4\_card\_3 (u3\_msualg\_1 \\
& \quad X0 X1)) X5 (k1\_nat\_1 X6 np\_1) = k6\_circuit2 X0 X1 (k8\_nat\_1 (k4\_card\_3 \\
& \quad (u3\_msualg\_1 X0 X1)) X5 X6)))))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v7\_ordinal1 X0) \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_msafree2 \\
& \quad X0) \wedge (l1\_msualg\_1 X0)))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (( \\
& \quad v4\_msafree2 X1 X0) \wedge (l3\_msualg\_1 X1 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& \quad X2 (k4\_card\_3 (u3\_msualg\_1 X0 X1))) \Rightarrow (k5\_facirc\_1 X0 X1 X2 k6\_numbers = \\
& \quad X2))
\end{aligned}$$