

# t26\_facirc\_1 (TMWpHgXr- pUd6nCPvkxrvPmemS1Ucven2uxM)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v11\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_circcomb : \iota \Rightarrow o$  be given. Let  $v2\_circcomb : \iota \Rightarrow o$  be given. Let  $v3\_circcomb : \iota \Rightarrow o$  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  $v4\_circcomb : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v6\_circcomb : \iota \Rightarrow \iota \Rightarrow o$  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  $k2\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_card\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_msualg\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_msualg\_1 X1)) \Rightarrow (\forall X2.(l3\_msualg\_1 \\ & X2 X0) \Rightarrow (\forall X3.(l3\_msualg\_1 X3 X1) \Rightarrow (((v6\_circcomb X2 X0) \wedge \\ & (v6\_circcomb X3 X1)) \Rightarrow (r1\_partfun1 (u3\_msualg\_1 X0 X2) (u3\_msualg\_1 \\ & X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_msualg\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_msualg\_1 X1)) \Rightarrow (\forall X2.((v4\_msualg\_1 \\ & X2 X0) \wedge (l3\_msualg\_1 X2 X0)) \Rightarrow (\forall X3.((v4\_msualg\_1 X3 X1) \wedge \\ & (l3\_msualg\_1 X3 X1)) \Rightarrow ((r1\_partfun1 (u3\_msualg\_1 X0 X2) (u3\_msualg\_1 \\ & X1 X3)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (k4\_card\_3 (u3\_msualg\_1 ( \\ & k2\_circcomb X0 X1) (k3\_circcomb X0 X1 X2 X3)))) \Rightarrow ((k11\_card\_3 (u3\_msualg\_1 \\ & (k2\_circcomb X0 X1) (k3\_circcomb X0 X1 X2 X3)) X4 (u1\_struct\_0 X0) \in \\ & k4\_card\_3 (u3\_msualg\_1 X0 X2)) \wedge (k11\_card\_3 (u3\_msualg\_1 (k2\_circcomb \\ & X0 X1) (k3\_circcomb X0 X1 X2 X3)) X4 (u1\_struct\_0 X1) \in k4\_card\_3 ( \\ & u3\_msualg\_1 X1 X3))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \tag{3}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v1\_circcomb \\ & X0) \wedge ((v2\_circcomb X0) \wedge ((v3\_circcomb X0) \wedge (l1\_msualg\_1 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((\neg v11\_struct\_0 X1) \wedge ((v1\_circcomb \\ & X1) \wedge ((v2\_circcomb X1) \wedge ((v3\_circcomb X1) \wedge (l1\_msualg\_1 X1)))))) \Rightarrow \\ & (\forall X2.((v4\_msualg\_1 X2 X0) \wedge ((v4\_msafree2 X2 X0) \wedge ((v4\_circcomb \\ & X2 X0) \wedge ((v6\_circcomb X2 X0) \wedge (l3\_msualg\_1 X2 X0)))))) \Rightarrow (\forall X3. \\ & ((v4\_msualg\_1 X3 X1) \wedge ((v4\_msafree2 X3 X1) \wedge ((v4\_circcomb X3 X1) \wedge \\ & ((v6\_circcomb X3 X1) \wedge (l3\_msualg\_1 X3 X1)))))) \Rightarrow (\forall X4.(m1\_subset\_1 \\ & X4 (k4\_card\_3 (u3\_msualg\_1 (k2\_circcomb X0 X1) (k3\_circcomb X0 \\ & X1 X2 X3)))) \Rightarrow ((m1\_subset\_1 (k11\_card\_3 (u3\_msualg\_1 (k2\_circcomb \\ & X0 X1) (k3\_circcomb X0 X1 X2 X3)) X4 (u1\_struct\_0 X0)) (k4\_card\_3 \\ & (u3\_msualg\_1 X0 X2))) \wedge (m1\_subset\_1 (k11\_card\_3 (u3\_msualg\_1 \\ & (k2\_circcomb X0 X1) (k3\_circcomb X0 X1 X2 X3)) X4 (u1\_struct\_0 X1)) \\ & (k4\_card\_3 (u3\_msualg\_1 X1 X3)))))) \end{aligned}$$