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Star and Wheel on Recognition of Cancer and Neutrosophic SuperHyperGraph with a Specific Type of Independency of SuperHyperVertices

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Keywords: Neutrosophic SuperHyperGraph; $\text{SuperHyper}_{\text{STABLE}}$; Cancer's Neutrosophic Recognition

Article

Star and Wheel On Recognition of Cancer And Neutrosophic SuperHyperGraph With A Specific Type Of Independency of SuperHyperVertices

Mohammadesmail Nikfar

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Abstract: New ideas on the framework of Neutrosophic SuperHyperGraph for different styles of Neutrosophic SuperHyper-Wheel and Neutrosophic SuperHyper-Star are introduced. More instances and more clarifications alongside sufficient references are featured with a specific type of independency of SuperHyperVertices.

Keywords: Neutrosophic SuperHyperGraph, SuperHyperSTABLE, Cancer's Neutrosophic Recognition

MSC: 5C17 , 05C22, 05E45

1. Scientific Research

Referred to Ref.[2].

Theorem 1.

$$
\begin{aligned}
&|(\sum_{V_i\in V'} T(V_i), \sum_{V_i\in V'} I(V_i), \sum_{V_i\in V'} F(V_i))|\\
&= \max_{V''\subseteq V_{NSHG}} |\{ (\sum_{V_i\in V''} T(V_i), \sum_{V_i\in V''} I(V_i), \sum_{V_i\in V''} F(V_i)) \mid \forall V_i\in V'', \forall V_j\in V'' :\\
&T'_V(V_i, V_j\in E_{i'}) \not\leq \min[T_V(V'_i), T_V(V'_j)]_{V'_i,V'_j\in E_{NSHG}},\\
&I'_V(V_i, V_j\in E_{i'}) \not\leq \min[I_V(V'_i), I_V(V'_j)]_{V'_i,V'_j\in E_{NSHG}},\\
&\text{and } F'_V(E_{i'})(V_i, V_j\in E_{i'}) \not\leq \min[F_V(V'_i), F_V(V'_j)]_{V'_i,V'_j\in E_{NSHG}}\\
&\}
\end{aligned}
$$

Example 1. *Referred to the Figure 1.*

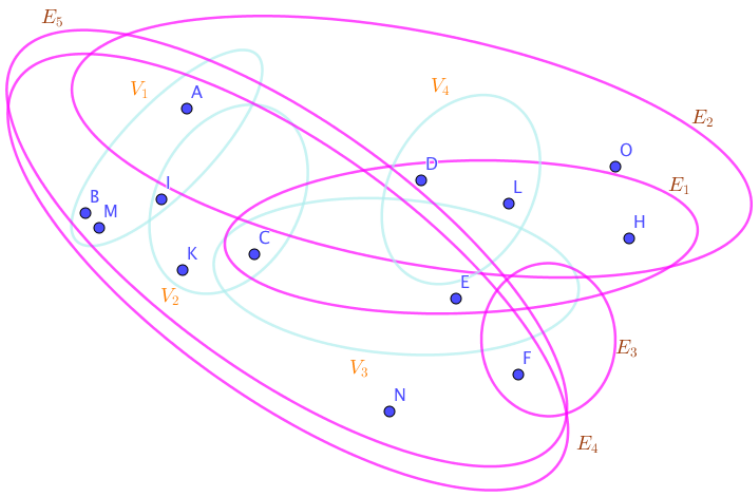

Figure 1. Referred to the Example (1)

Theorem 2. *Neutrosophic SuperHyperWheelStyles-I don't coincide.*

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1,3,5}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3,5}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3,5}\}} F(V_i))|\\
&=(0.76,0.76,0.76)=\\
\\
&=\max_{V''\subseteq V_{SHG}} |\{\,(\sum_{V_i\in V''} T(V_i),\sum_{V_i\in V''} I(V_i),\sum_{V_i\in V''} F(V_i))\,|\\
&V_{i=1,3,5}\in V'',\forall V_{j=1,3,5}\in V'':\\
&T'_V(E_k\sim^{\text{NOT DEFINED}}\min[T_{V'}(V_i),T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k)\sim^{\text{NOT DEFINED}}\min[I_{V'}(V_i),I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k)\sim^{\text{NOT DEFINED}}\min[F_{V'}(V_i),F_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\}
\end{aligned}
$$

□

Example 2. *Referred to the Figure 2.*

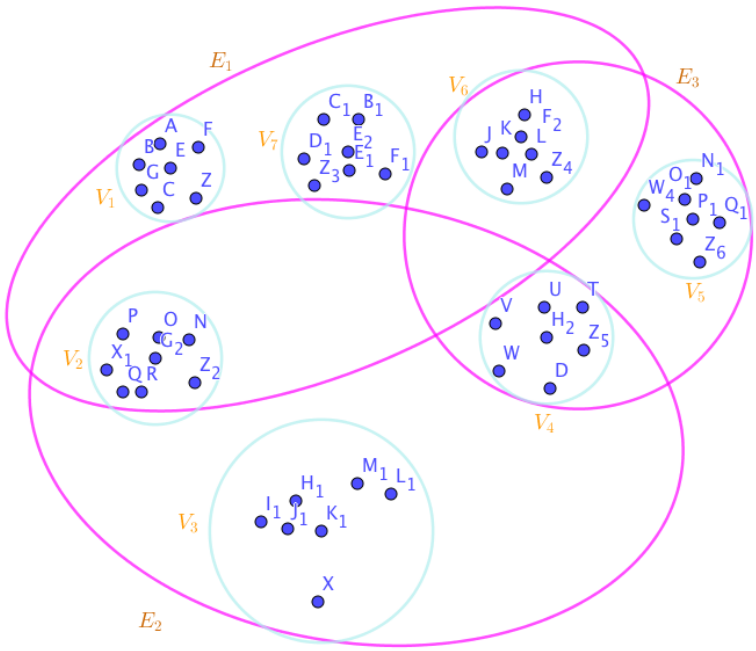

Figure 2. Referred to the Example (2)

Theorem 3. *Neutrosophic SuperHyperWheelStyles-II don't coincide.*

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1,3,5}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3,5}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3,5}\}} F(V_i))|\\
&=(0.73,0.73,0.73)=\\
\\
&=\max_{V''\subseteq V_{SHG}} |\{\,(\sum_{V_i\in V''} T(V_i),\sum_{V_i\in V''} I(V_i),\sum_{V_i\in V''} F(V_i))\,|\\
&V_{i=1,3,5}\in V'', \forall V_{j=1,3,5}\in V'':\\
&T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i),T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i),I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i),F_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\}
\end{aligned}
$$

□

Example 3. *Referred to the Figure 3.*

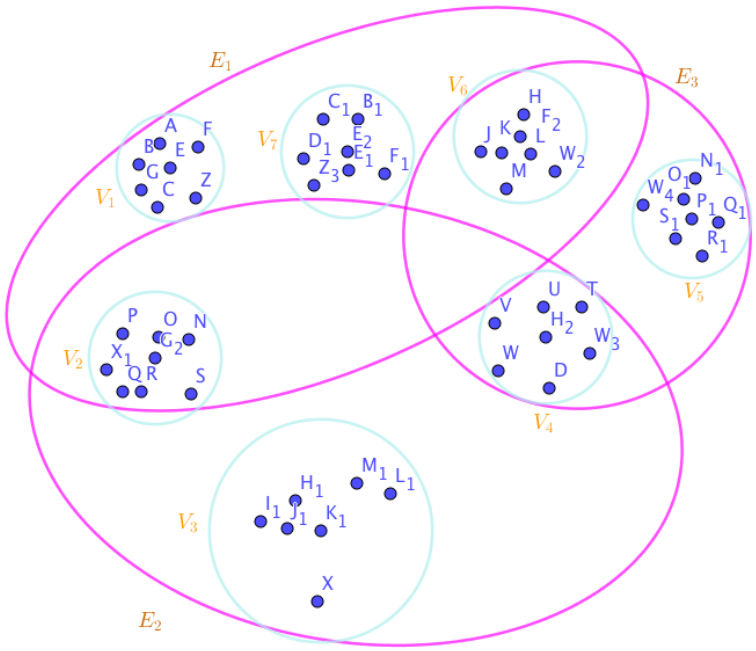

Figure 3. Referred to the Example (3)

Theorem 4. *Neutrosophic SuperHyperWheelStyles-III don't coincide.*

Proof.

$$|(\sum_{V_i \in V' = \{V_{i=1-4}\}} T(V_i), \sum_{V_i \in V' = \{V_{i=1-4}\}} I(V_i), \sum_{V_i \in V' = \{V_{i=1-4}\}} F(V_i))| = (0.92, 0.92, 0.92) =$$

$$= \max_{V'' \subseteq V_{SHG}} |\{ (\sum_{V_i \in V''} T(V_i), \sum_{V_i \in V''} I(V_i), \sum_{V_i \in V''} F(V_i)) |$$

$V_{i=1,3} \in V'', \forall V_{j=1,3} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i, V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i, V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i, V_j \notin E_k},$

$V_{i=1,4} \in V'', \forall V_{j=1,4} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i, V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i, V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i, V_j \notin E_k},$

$V_2 \in V'', \forall V_3 \in V'':$
$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[T_{V'}(V_2), T_{V'}(V_3)]_{V_2, V_3 \in E_2},$
$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[I_{V'}(V_2), I_{V'}(V_3)]_{V_2, V_3 \in E_2},$
and $F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[F_{V'}(V_2), F_{V'}(V_3)]_{V_2, V_3 \in E_2},$

$V_2 \in V'', \forall V_4 \in V'':$
$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[T_{V'}(V_2), T_{V'}(V_4)]_{V_2, V_4 \in E_2},$
$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[I_{V'}(V_2), I_{V'}(V_4)]_{V_2, V_4 \in E_2},$
and $F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[F_{V'}(V_2), F_{V'}(V_4)]_{V_2, V_4 \in E_2},$

$V_4 \in V'', \forall V_3 \in V'':$

$$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) = \min[T_{V'}(V_4), T_{V'}(V_3)]_{V_4, V_3 \in E_2},$$
$$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) = \min[I_{V'}(V_4), I_{V'}(V_3)]_{V_4, V_3 \in E_2},$$
$$\text{and } F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) = \min[F_{V'}(V_4), F_{V'}(V_3)]_{V_4, V_3 \in E_2},$$
$$\}$$

□

Example 4. *Referred to the Figure* (4).

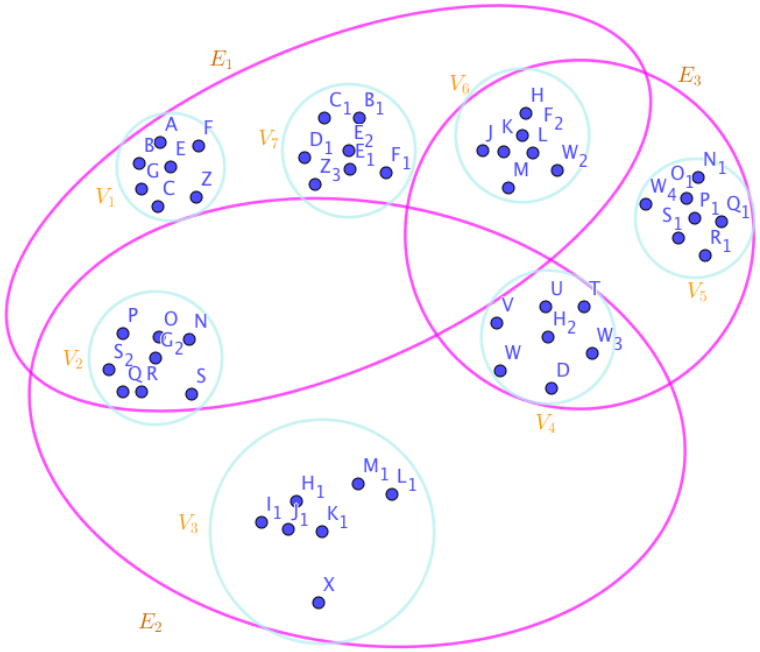

Figure 4. Referred to the Example (4)

Theorem 5. *Neutrosophic SuperHyperWheelStyles-IV don't coincide.*

Proof.

$$|(\sum_{V_i \in V' = \{V_{i=1-4,7}\}} T(V_i), \sum_{V_i \in V' = \{V_{i=1-4,7}\}} I(V_i), \sum_{V_i \in V' = \{V_{i=1-4,7}\}} F(V_i))|$$
$$= (1.15, 1.15, 1.15) =$$

$$= \max_{V'' \subseteq V_{SHG}} |\{ (\sum_{V_i \in V''} T(V_i), \sum_{V_i \in V''} I(V_i), \sum_{V_i \in V''} F(V_i)) |$$

$V_{i=1,3} \in V'', \forall V_{j=1,3} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=1,4} \in V'', \forall V_{j=1,4} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=7,3} \in V'', \forall V_{j=7,3} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=7,4} \in V'', \forall V_{j=7,4} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_1 \in V'', \forall V_7 \in V'':$
$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_1), T_{V'}(V_7)]_{V_1,V_7 \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_1), I_{V'}(V_7)]_{V_1,V_7 \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_1), F_{V'}(V_7)]_{V_1,V_7 \in E_1}$,

$V_2 \in V'', \forall V_3 \in V'':$
$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[T_{V'}(V_2), T_{V'}(V_3)]_{V_2,V_3 \in E_2}$,
$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[I_{V'}(V_2), I_{V'}(V_3)]_{V_2,V_3 \in E_2}$,
and $F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[F_{V'}(V_2), F_{V'}(V_3)]_{V_2,V_3 \in E_2}$,

$V_2 \in V'', \forall V_4 \in V'':$
$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[T_{V'}(V_2), T_{V'}(V_4)]_{V_2,V_4 \in E_2}$,
$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[I_{V'}(V_2), I_{V'}(V_4)]_{V_2,V_4 \in E_2}$,
and $F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[F_{V'}(V_2), F_{V'}(V_4)]_{V_2,V_4 \in E_2}$,

$V_4 \in V'', \forall V_3 \in V'':$
$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_4), T_{V'}(V_3)]_{V_4,V_3 \in E_2}$,
$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_4), I_{V'}(V_3)]_{V_4,V_3 \in E_2}$,
and $F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_4), F_{V'}(V_3)]_{V_4,V_3 \in E_2}$,
$\}$

□

Example 5. *Referred to the Figure 5.*

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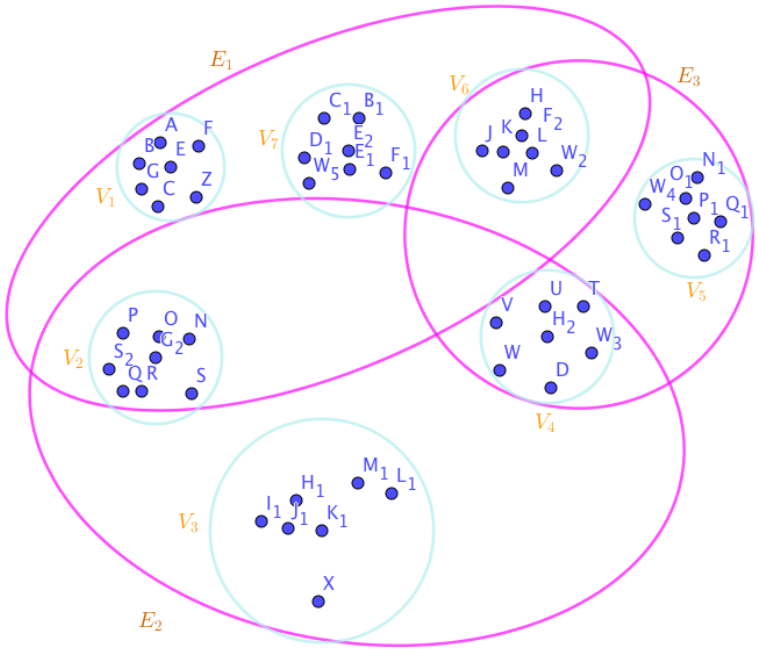

Figure 5. Referred to the Example (5)

Theorem 6. *Neutrosophic SuperHyperWheelStyles-V don't coincide.*

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1-4,6-7}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1-4,6-7}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1-4,6-7}\}} F(V_i))|\\
&= (1.39, 1.39, 1.39) =
\end{aligned}
$$

$$
= \max_{V''\subseteq V_{SHG}} |\{ (\sum_{V_i\in V''} T(V_i), \sum_{V_i\in V''} I(V_i), \sum_{V_i\in V''} F(V_i)) |
$$

$$
\begin{aligned}
&V_{i=1,3} \in V'', \forall V_{j=1,3} \in V'' :\\
&T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j\notin E_k},
\end{aligned}
$$

$$
\begin{aligned}
&V_{i=1,4} \in V'', \forall V_{j=1,4} \in V'' :\\
&T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j\notin E_k},
\end{aligned}
$$

$V_{i=7,3} \in V'', \forall V_{j=7,3} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=7,4} \in V'', \forall V_{j=7,4} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=6,3} \in V'', \forall V_{j=6,3} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_1 \in V'', \forall V_7 \in V'':$
$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_1), T_{V'}(V_7)]_{V_1,V_7 \in E_1},$
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_1), I_{V'}(V_7)]_{V_1,V_7 \in E_1},$
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_1), F_{V'}(V_7)]_{V_1,V_7 \in E_1},$

$V_1 \in V'', \forall V_6 \in V'':$
$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.24, 0.24, 0.24) =$
$\min[T_{V'}(V_1), T_{V'}(V_7)]_{V_1,V_7 \in E_1},$
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.24, 0.24, 0.24) =$
$\min[I_{V'}(V_1), I_{V'}(V_7)]_{V_1,V_7 \in E_1},$
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.24, 0.24, 0.24) =$
$\min[F_{V'}(V_1), F_{V'}(V_7)]_{V_1,V_7 \in E_1},$

$V_6 \in V'', \forall V_7 \in V'':$
$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_1), T_{V'}(V_7)]_{V_1,V_7 \in E_1},$
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_1), I_{V'}(V_7)]_{V_1,V_7 \in E_1},$
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_1), F_{V'}(V_7)]_{V_1,V_7 \in E_1},$

$V_2 \in V'', \forall V_3 \in V'':$
$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[T_{V'}(V_2), T_{V'}(V_3)]_{V_2,V_3 \in E_2}$,
$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[I_{V'}(V_2), I_{V'}(V_3)]_{V_2,V_3 \in E_2}$,
and $F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[F_{V'}(V_2), F_{V'}(V_3)]_{V_2,V_3 \in E_2}$,

$V_2 \in V'', \forall V_4 \in V'':$
$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[T_{V'}(V_2), T_{V'}(V_4)]_{V_2,V_4 \in E_2}$,
$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[I_{V'}(V_2), I_{V'}(V_4)]_{V_2,V_4 \in E_2}$,
and $F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.19, 0.19, 0.19) =$
$\min[F_{V'}(V_2), F_{V'}(V_4)]_{V_2,V_4 \in E_2}$,

$V_4 \in V'', \forall V_3 \in V'':$
$T'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_4), T_{V'}(V_3)]_{V_4,V_3 \in E_2}$,
$I'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_4), I_{V'}(V_3)]_{V_4,V_3 \in E_2}$,
and $F'_V(E_2) = (0.24, 0.24, 0.24) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_4), F_{V'}(V_3)]_{V_4,V_3 \in E_2}$,
$\}$

□

Example 6. *Referred to the Figure 6.*

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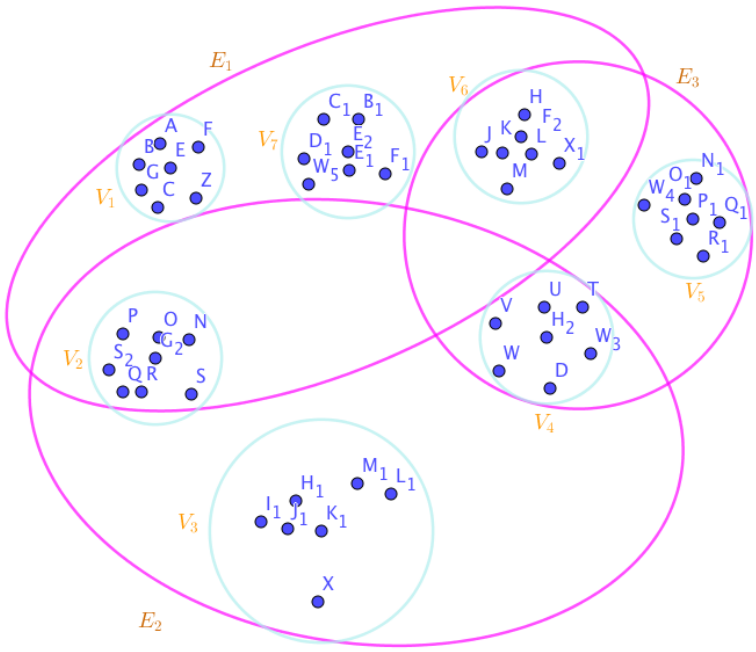

Figure 6. Referred to the Example (6)

Theorem 7. *Neutrosophic SuperHyperWheelStyles-VI don't coincide.*

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1-7}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1-7}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1-7}\}} F(V_i))|\\
&=(1.65,1.65,1.65)=
\end{aligned}
$$

$$
=\max_{V''\subseteq V_{SHG}} |\{\,(\sum_{V_i\in V''} T(V_i),\sum_{V_i\in V''} I(V_i),\sum_{V_i\in V''} F(V_i))\,|
$$

$$
\begin{aligned}
&V_{i=1,3}\in V'',\forall V_{j=1,3}\in V'':\\
&T'_V(E_k\sim^{\text{NOT DEFINED}}\min[T_{V'}(V_i),T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k)\sim^{\text{NOT DEFINED}}\min[I_{V'}(V_i),I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k)\sim^{\text{NOT DEFINED}}\min[F_{V'}(V_i),F_{V'}(V_j)]_{V_i,V_j\notin E_k},
\end{aligned}
$$

$$
\begin{aligned}
&V_{i=1,4}\in V'',\forall V_{j=1,4}\in V'':\\
&T'_V(E_k\sim^{\text{NOT DEFINED}}\min[T_{V'}(V_i),T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k)\sim^{\text{NOT DEFINED}}\min[I_{V'}(V_i),I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k)\sim^{\text{NOT DEFINED}}\min[F_{V'}(V_i),F_{V'}(V_j)]_{V_i,V_j\notin E_k},
\end{aligned}
$$

$V_{i=1,5} \in V'', \forall V_{j=1,5} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=7,3} \in V'', \forall V_{j=7,3} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=7,5} \in V'', \forall V_{j=7,5} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=2,5} \in V'', \forall V_{j=2,5} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=3,5} \in V'', \forall V_{j=3,5} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=7,4} \in V'', \forall V_{j=7,4} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_{i=6,3} \in V'', \forall V_{j=6,3} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$

$V_1 \in V'', \forall V_7 \in V'':$
$T'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_1), T_{V'}(V_7)]_{V_1,V_7 \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_1), I_{V'}(V_7)]_{V_1,V_7 \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_1), F_{V'}(V_7)]_{V_1,V_7 \in E_1}$,

$V_1 \in V'', \forall V_6 \in V'':$
$T'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.24, 0.24, 0.24) =$
$\min[T_{V'}(V_1), T_{V'}(V_7)]_{V_1,V_7 \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.24, 0.24, 0.24) =$
$\min[I_{V'}(V_1), I_{V'}(V_7)]_{V_1,V_7 \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.24, 0.24, 0.24) =$
$\min[F_{V'}(V_1), F_{V'}(V_7)]_{V_1,V_7 \in E_1}$,

$V_6 \in V'', \forall V_7 \in V'':$
$T'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_1), T_{V'}(V_7)]_{V_1,V_7 \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_1), I_{V'}(V_7)]_{V_1,V_7 \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \lesssim (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_1), F_{V'}(V_7)]_{V_1,V_7 \in E_1}$,

$V_2 \in V'', \forall V_3 \in V'':$
$T'_V(E_2) = (0.26, 0.26, 0.26) \lesssim (0.19, 0.19, 0.19) =$
$\min[T_{V'}(V_2), T_{V'}(V_3)]_{V_2,V_3 \in E_2}$,
$I'_V(E_2) = (0.26, 0.26, 0.26) \lesssim (0.19, 0.19, 0.19) =$
$\min[I_{V'}(V_2), I_{V'}(V_3)]_{V_2,V_3 \in E_2}$,
and $F'_V(E_2) = (0.26, 0.26, 0.26) \lesssim (0.19, 0.19, 0.19) =$
$\min[F_{V'}(V_2), F_{V'}(V_3)]_{V_2,V_3 \in E_2}$,

$V_2 \in V'', \forall V_4 \in V'':$
$T'_V(E_2) = (0.26, 0.26, 0.26) \lesssim (0.19, 0.19, 0.19) =$
$\min[T_{V'}(V_2), T_{V'}(V_4)]_{V_2,V_4 \in E_2}$,
$I'_V(E_2) = (0.26, 0.26, 0.26) \lesssim (0.19, 0.19, 0.19) =$
$\min[I_{V'}(V_2), I_{V'}(V_4)]_{V_2,V_4 \in E_2}$,
and $F'_V(E_2) = (0.26, 0.26, 0.26) \lesssim (0.19, 0.19, 0.19) =$
$\min[F_{V'}(V_2), F_{V'}(V_4)]_{V_2,V_4 \in E_2}$,

$V_4 \in V'', \forall V_3 \in V'':$
$T'_V(E_2) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_4), T_{V'}(V_3)]_{V_4,V_3 \in E_2}$,
$I'_V(E_2) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_4), I_{V'}(V_3)]_{V_4,V_3 \in E_2}$,
and $F'_V(E_2) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_4), F_{V'}(V_3)]_{V_4,V_3 \in E_2}$,

$V_4 \in V'', \forall V_5 \in V'':$
$T'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_4), T_{V'}(V_5)]_{V_4,V_5 \in E_3}$,
$I'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_4), I_{V'}(V_5)]_{V_4,V_5 \in E_3}$,
and $F'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_4), F_{V'}(V_5)]_{V_4,V_5 \in E_3}$,

$V_4 \in V'', \forall V_6 \in V'':$
$T'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.24, 0.24, 0.24) =$
$\min[T_{V'}(V_4), T_{V'}(V_6)]_{V_4,V_6 \in E_3}$,
$I'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.24, 0.24, 0.24) =$
$\min[I_{V'}(V_4), I_{V'}(V_6)]_{V_4,V_6 \in E_3}$,
and $F'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.24, 0.24, 0.24) =$
$\min[F_{V'}(V_4), F_{V'}(V_6)]_{V_4,V_6 \in E_3}$,

$V_6 \in V'', \forall V_5 \in V'':$
$T'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_6), T_{V'}(V_5)]_{V_6,V_5 \in E_3}$,
$I'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_6), I_{V'}(V_5)]_{V_6,V_5 \in E_3}$,
and $F'_V(E_3) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_6), F_{V'}(V_5)]_{V_6,V_5 \in E_3}$,
$\}$

□

Example 7. *Referred to the Figure 7.*

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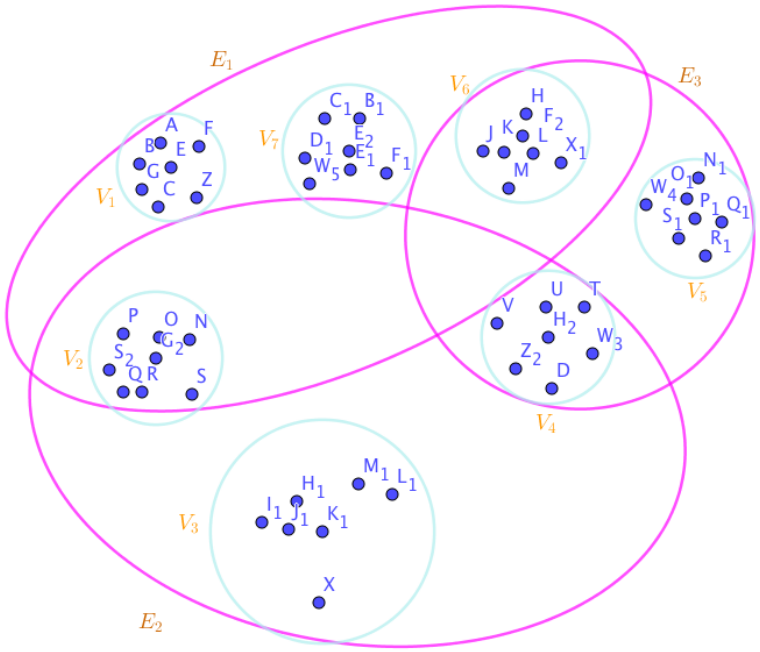

Figure 7. Referred to the Example (7)

Theorem 8. *Neutrosophic SuperHyperStarStyles-I don't coincide.*

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1,3,5}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3,5}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3,5}\}} F(V_i))|\\
&=(0.78,0.78,0.78)=\\
\\
&=\max_{V''\subseteq V_{SHG}} |\{\ (\sum_{V_i\in V''} T(V_i), \sum_{V_i\in V''} I(V_i), \sum_{V_i\in V''} F(V_i))\ |\\
&V_{i=1,3,5}\in V'', \forall V_{j=1,3,5}\in V'':\\
&T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j\notin E_k}\\
&\}
\end{aligned}
$$

□

Example 8. *Referred to the Figure 8.*

Theorem 9. *Neutrosophic SuperHyperStarStyles-II don't coincide.*

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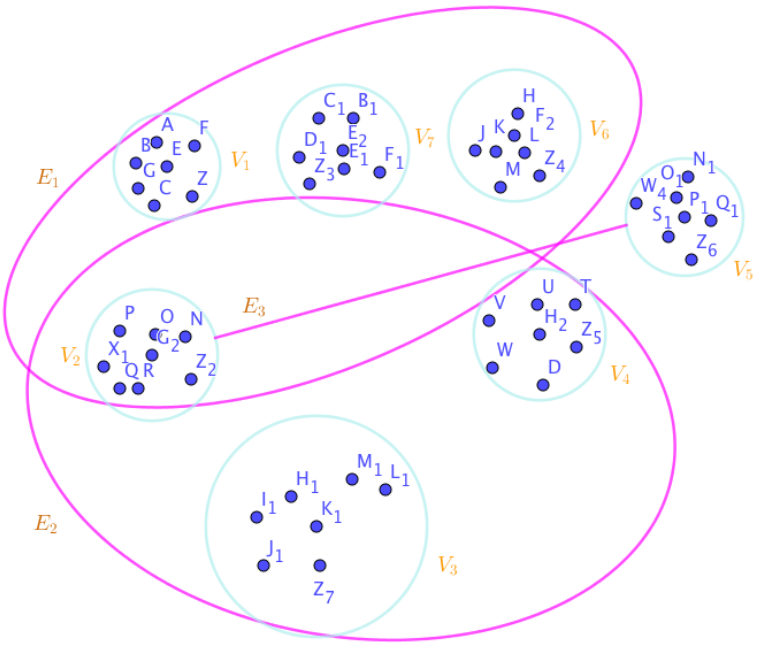

Figure 8. Referred to the Example (8)

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1,3,5-6}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3,5-6}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3,5-6}\}} F(V_i))|\\
&=(1.01,1.01,1.01)=
\end{aligned}
$$

$$
=\max_{V''\subseteq V_{SHG}} |\{\,(\sum_{V_i\in V''} T(V_i),\sum_{V_i\in V''} I(V_i),\sum_{V_i\in V''} F(V_i))\,|
$$

$V_{i=1,3,5}\in V'', \forall V_{j=1,3,5}\in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j\notin E_k}$
$V_{i=3,5-6}\in V'', \forall V_{j=3,5-6}\in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$V_{i=1,6}\in V'', \forall V_{j=1,6}\in V'':$

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$$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1},$$
$$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1},$$
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
$\}$

□

Example 9. *Referred to the Figure 9.*

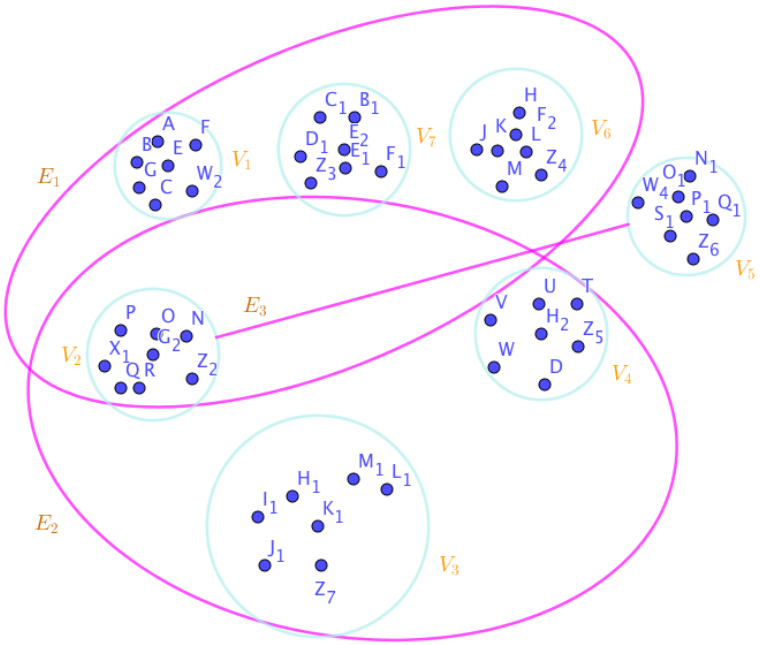

Figure 9. Referred to the Example (9)

Theorem 10. *Neutrosophic SuperHyperStarStyles-III don't coincide.*

Proof.

$$|(\sum_{V_i \in V' = \{V_{i=1,3-4,5-6}\}} T(V_i), \sum_{V_i \in V' = \{V_{i=1,3-4,5-6}\}} I(V_i), \sum_{V_i \in V' = \{V_{i=1,3-4,5-6}\}} F(V_i))|$$
$$= (1.27, 1.27, 1.27) =$$

$$= \max_{V'' \subseteq V_{SHG}} |\{ (\sum_{V_i \in V''} T(V_i), \sum_{V_i \in V''} I(V_i), \sum_{V_i \in V''} F(V_i)) |$$

$V_{i=1,3,5} \in V'', \forall V_{j=1,3,5} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=1,4,5} \in V'', \forall V_{j=1,4,5} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=3,5-6} \in V'', \forall V_{j=3,5-6} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=4,5-6} \in V'', \forall V_{j=4,5-6} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=1,6} \in V'', \forall V_{j=1,6} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1},$
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1},$
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
$V_{i=3,4} \in V'', \forall V_{j=3,4} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1},$
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1},$
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
}

□

Example 10. *Referred to the Figure 10.*

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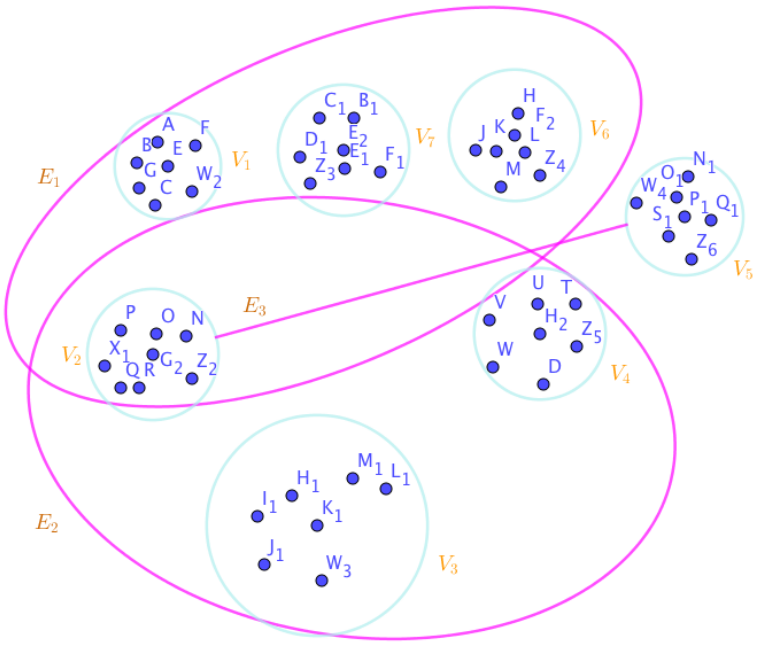

Figure 10. Referred to the Example (10)

Theorem 11. *Neutrosophic SuperHyperStarStyles-IV don't coincide.*

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1,3-4,5-6}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3-4,5-6}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3-4,5-6}\}} F(V_i))|\\
&=(1.24,1.24,1.24)=
\end{aligned}
$$

$$
=\max_{V''\subseteq V_{SHG}} |\{\,(\sum_{V_i\in V''} T(V_i),\sum_{V_i\in V''} I(V_i),\sum_{V_i\in V''} F(V_i))\,|
$$

$V_{i=1,3,5}\in V'', \forall V_{j=1,3,5}\in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$V_{i=1,4,5}\in V'', \forall V_{j=1,4,5}\in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},$

and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=3,5-6} \in V'', \forall V_{j=3,5-6} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=4,5-6} \in V'', \forall V_{j=4,5-6} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=1,6} \in V'', \forall V_{j=1,6} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
$V_{i=3,4} \in V'', \forall V_{j=3,4} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
}

□

Example 11. *Referred to the Figure 11.*

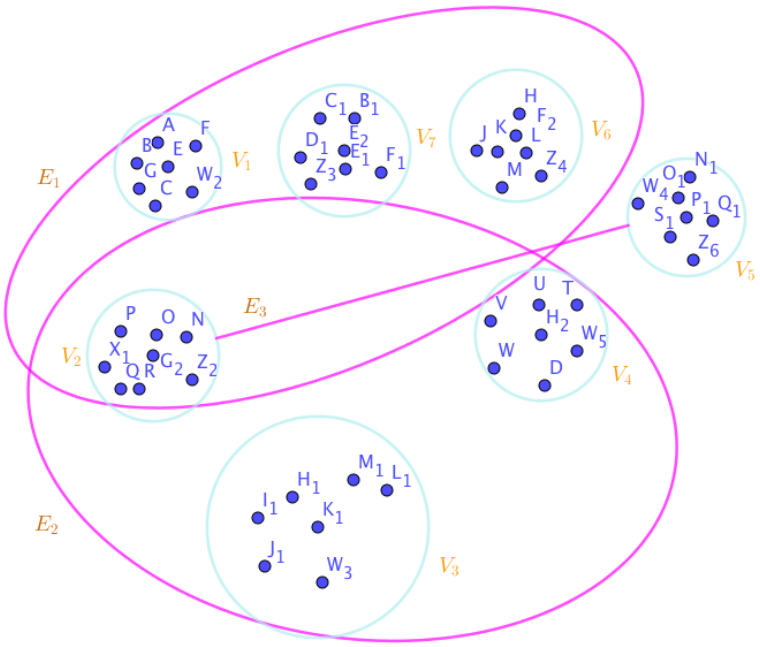

Figure 11. Referred to the Example (14)

Theorem 12. *Neutrosophic SuperHyperStarStyles-V don't coincide.*

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1,3-4,5-6}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3-4,5-6}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3-4,5-6}\}} F(V_i))|\\
&=(1.21,1.21,1.21)=
\end{aligned}
$$

$$
=\max_{V''\subseteq V_{SHG}} |\{(\sum_{V_i\in V''} T(V_i), \sum_{V_i\in V''} I(V_i), \sum_{V_i\in V''} F(V_i))|
$$

$V_{i=1,3,5}\in V'', \forall V_{j=1,3,5}\in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$V_{i=1,4,5}\in V'', \forall V_{j=1,4,5}\in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j\notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j\notin E_k},$
$V_{i=3,5-6}\in V'', \forall V_{j=3,5-6}\in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j\notin E_k},$

$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=4,5-6} \in V'', \forall V_{j=4,5-6} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=1,6} \in V'', \forall V_{j=1,6} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
$V_{i=3,4} \in V'', \forall V_{j=3,4} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
}

□

Example 12. *Referred to the Figure 12.*

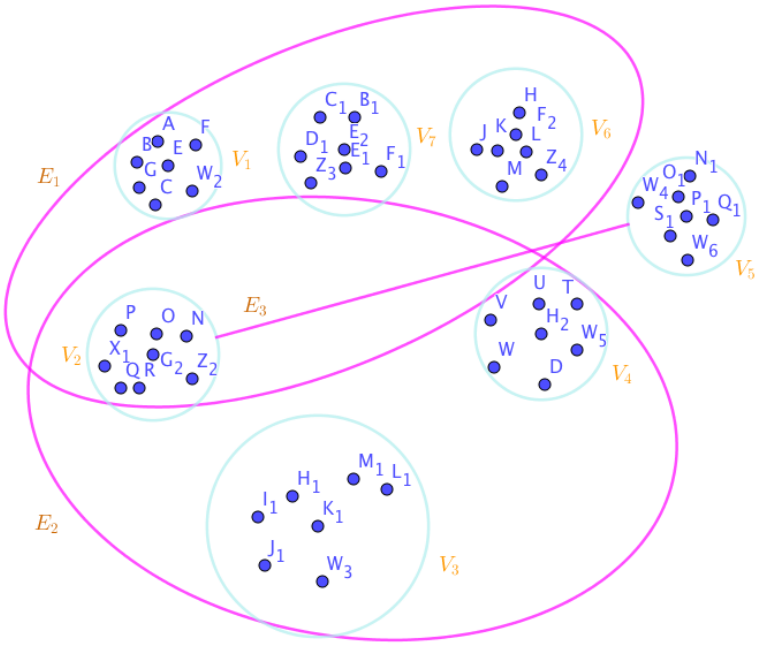

Figure 12. Referred to the Example (14)

Theorem 13. *Neutrosophic SuperHyperStarStyles-VI don't coincide.*

Proof.

$$
\begin{aligned}
&|(\sum_{V_i\in V'=\{V_{i=1,3-4,5-7}\}} T(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3-4,5-7}\}} I(V_i),\\
&\sum_{V_i\in V'=\{V_{i=1,3-4,5-7}\}} F(V_i))|\\
&=(1.44,1.44,1.44)=
\end{aligned}
$$

$$
=\max_{V''\subseteq V_{SHG}} |\{\,(\sum_{V_i\in V''} T(V_i),\sum_{V_i\in V''} I(V_i),\sum_{V_i\in V''} F(V_i))\,|
$$

$$
\begin{aligned}
&V_{i=1,3,5}\in V'', \forall V_{j=1,3,5}\in V'':\\
&T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i),T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i),I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i),F_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&V_{i=1,4,5}\in V'', \forall V_{j=1,4,5}\in V'':\\
&T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i),T_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i),I_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&\text{and } F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i),F_{V'}(V_j)]_{V_i,V_j\notin E_k},\\
&V_{i=3,5-6}\in V'', \forall V_{j=3,5-6}\in V'':\\
&T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i),T_{V'}(V_j)]_{V_i,V_j\notin E_k},
\end{aligned}
$$

$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=4,5-6} \in V'', \forall V_{j=4,5-6} \in V''$:
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=3,5-6} \in V'', \forall V_{j=3,5-7} \in V''$:
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=4,5-6} \in V'', \forall V_{j=4,5-7} \in V''$:
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k}$,
$V_{i=1,6} \in V'', \forall V_{j=1,6} \in V''$:

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
$V_{i=1,7} \in V'', \forall V_{j=1,7} \in V''$:

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
$V_{i=6,7} \in V'', \forall V_{j=6,7} \in V''$:

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$

$V_{i=3,4} \in V'', \forall V_{j=3,4} \in V'' :$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
$\}$

□

Example 13. *Referred to the Figure 13.*

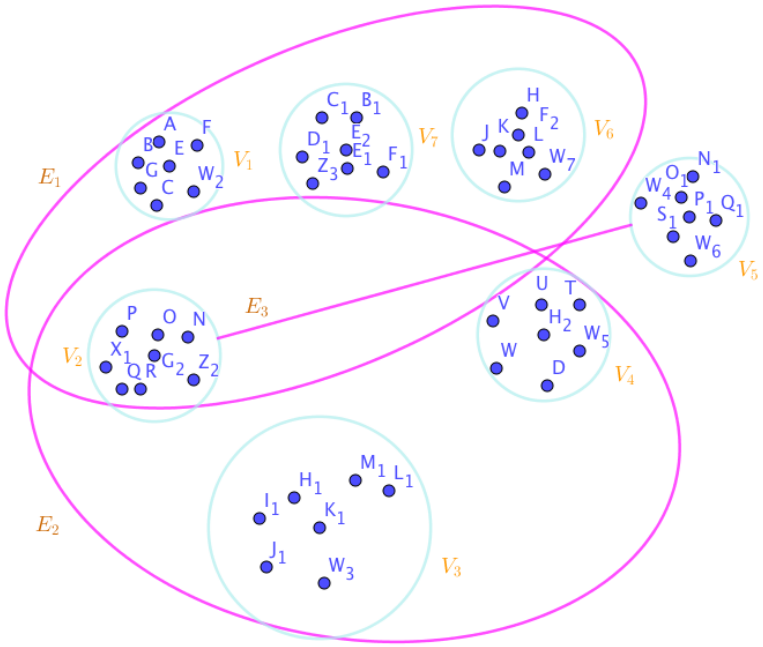

Figure 13. Referred to the Example (14)

Theorem 14. *Neutrosophic SuperHyperStarStyles-VII don't coincide.*

Proof.

$|(\sum_{V_i \in V' = \{V_{i=1-7}\}} T(V_i),$
$\sum_{V_i \in V' = \{V_{i=1-7}\}} I(V_i),$
$\sum_{V_i \in V' = \{V_{i=1-7}\}} F(V_i))|$
$= (1.67, 1.67, 1.67) =$

$$= \max_{V'' \subseteq V_{SHG}} |\{ (\sum_{V_i \in V''} T(V_i), \sum_{V_i \in V''} I(V_i), \sum_{V_i \in V''} F(V_i)) |$$

$V_{i=1,3,5} \in V'', \forall V_{j=1,3,5} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=1,4,5} \in V'', \forall V_{j=1,4,5} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=3,5-6} \in V'', \forall V_{j=3,5-6} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=4,5-6} \in V'', \forall V_{j=4,5-6} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=3,5-6} \in V'', \forall V_{j=3,5-7} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=4,5-6} \in V'', \forall V_{j=4,5-7} \in V'':$
$T'_V(E_k \sim^{\text{NOT DEFINED}} \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$I'_V(E_k) \sim^{\text{NOT DEFINED}} \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \notin E_k},$
and $F'_V(E_k) \sim^{\text{NOT DEFINED}} \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \notin E_k},$
$V_{i=1,6} \in V'', \forall V_{j=1,6} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1},$
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1},$
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
$V_{i=1,6} \in V'', \forall V_{j=1,7} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1},$
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1},$
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) =$
$\min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$

$V_{i=6,7} \in V'', \forall V_{j=6,7} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$

$V_{i=3,4} \in V'', \forall V_{j=3,4} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$

$V_{i=2} \in V'', \forall V_{j=1,3-7} \in V'':$

$T'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i,V_j \in E_1}$,
$I'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i,V_j \in E_1}$,
and $F'_V(E_1) = (0.26, 0.26, 0.26) \not\leq (0.23, 0.23, 0.23) = \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i,V_j \in E_1}$
}

□

Example 14. *Referred to the Figure 14.*

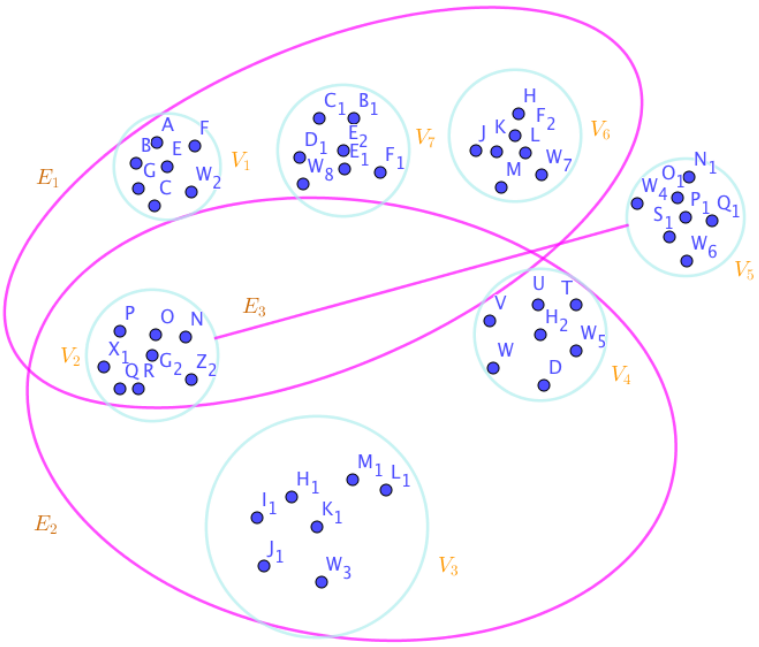

Figure 14. Referred to the Example (14)

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