Revealed Preference

$WARP$: If a consumer is observed to make a bunch of choices, choosing $\mathbf{x}^i$ when the prices are $\mathbf{p}^i$, then

$$\mathbf{p}^i \cdot \mathbf{x}^i \geq \mathbf{p}^i \cdot \mathbf{x}^j \rightarrow \mathbf{p}^j \cdot \mathbf{x}^j < \mathbf{p}^j \cdot \mathbf{x}^i \qquad (1)$$

for any distinct observations i and j

$SARP$: There is no cycle of any length M, such that

$$\mathbf{p}^i \cdot \mathbf{x}^i \geq \mathbf{p}^i \cdot \mathbf{x}^{i+1} \qquad i = 1, 2, \cdots, M$$

with

$$\mathbf{p}^M \cdot \mathbf{x}^M > \mathbf{p}^M \cdot \mathbf{x}^1$$