(ii)

$$\begin{cases} \vec{R}_1 = (1,1,-1)\,\dfrac{a}{2} = \vec{R}_2' + \vec{R}_1' - \vec{R}_3' \\ \vec{R}_2 = (1,-1,1)\,\dfrac{a}{2} = \vec{R}_3' - \vec{R}_2' \\ \vec{R}_3 = (-1,1,1)\,\dfrac{a}{2} = \vec{R}_3' - \vec{R}_1' \end{cases}$$

$\Rightarrow$ $\vec{R}_1$, $\vec{R}_2$ and $\vec{R}_3$ can be represented as linear combinations of $\vec{R}_1$, $\vec{R}_2$ and $\vec{R}_3$.

From (i) and (ii), a lattice point that can be given by linear combinations of $\vec{R}_1$, $\vec{R}_2$ and $\vec{R}_3$ can also be represented as linear combinations of $\vec{R}_1'$, $\vec{R}_2'$ and $\vec{R}_3'$, and vice versa.

For example, a lattice point $\vec{P} = a_1\vec{R}_1 + a_2\vec{R}_2 + a\vec{R}_3 =$

$a_1(\vec{R}_2' + \vec{R}_1' - \vec{R}_3') + a_2(\vec{R}_3' - \vec{R}_2') + a_3(\vec{R}_3' - \vec{R}_1') =$

$b_1\vec{R}_1' + b_2\vec{R}_2' + b_3\vec{R}_3'$, with $b_1 = (a_1 - a_3)$, $b_2 = (a_1 - a_2)$, $b_3 = (-a_1 + a_2 + a_3)$

Thus these two lattices are equivalent !!