

```

Kas[X[i_, j_, k_, L_]] :=
If[PositiveQ@X[i, j, k, L],
Kas[Perm[{-i, j, k, -L}],
PQ[Subspace[{y-i, yj, yk, y-L},
{y-i, yj, yk, y-L}],
 $\frac{1}{2} \left( \eta_{-i}^2 + 2 u \eta_{-i} \eta_j + v \eta_j^2 + 2 \eta_{-i} \eta_k + 2 u \eta_j \eta_k + \right.$ 
 $\left. \eta_k^2 + 2 u \eta_{-i} \eta_{-L} + 2 \eta_j \eta_{-L} + 2 u \eta_k \eta_{-L} + v \eta_{-L}^2 \right) \Big] \Big],$ 
Kas[Perm[{-i, -j, k, L}],
PQ[Subspace[{y-j, yk, yL, y-i},
{y-j, yk, yL, y-i}],
 $\frac{1}{2} \left( -v \eta_{-i}^2 - 2 u \eta_{-i} \eta_{-j} - \eta_{-j}^2 - 2 \eta_{-i} \eta_k - \right.$ 
 $2 u \eta_{-j} \eta_k - v \eta_k^2 - 2 u \eta_{-i} \eta_L - 2 \eta_{-j} \eta_L -$ 
 $\left. 2 u \eta_k \eta_L - \eta_L^2 \right) \Big] \Big]$ 
]

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