

```

PF[n_,  $\sigma_{i,j}$ ] := PF[n,  $\sigma_{i,j}$ ] = Module[{p, q, s},
  Flatten@{ $\sigma_{i,j}$ ,  $\sigma_{j,i}$ ,  $\bar{\sigma}_{j,i}$ ,
    Table[{ $\sigma_{p,q}$ ,  $\sigma_{q,p}$ ,  $\bar{\sigma}_{p,q}$ ,  $\bar{\sigma}_{q,p}$ }, {p, {i, j}}, {q, Range[n] \ {i, j}}],
    Table[{ $\sigma_{p,q}$ ,  $\bar{\sigma}_{p,q}$ }, {p, Range[i + 1, n] \ {j}}, {q, Range[n] \ {i, j, p}}] ]];
PF[n_,  $\bar{\sigma}_{i,j}$ ] := PF[n,  $\bar{\sigma}_{i,j}$ ] = PF[n,  $\sigma_{i,j}$ ] /.  $\sigma_{i,j} \rightarrow \bar{\sigma}_{i,j}$ 

```