

```

R12Reduce1 [vd_VD] := Tidy@Module[{R2s, R2}, Which[
  Length[R2s = Cases[vd, X_s_[i_, j_] => X_s_[i + 1, j + 1]] ∩ (List @@ vd)] >
    0,
  Complement[vd, VD[R2 = First@R2s,
    R2 /. X_s_[i_, j_] => X_s_[i - 1, j - 1]]],
  Length[R2s = Cases[vd, X_s_[i_, j_] => X_s_[i + 1, j - 1]] ∩ (List @@ vd)] >
    0,
  Complement[vd, VD[R2 = First@R2s,
    R2 /. X_s_[i_, j_] => X_s_[i - 1, j + 1]]],
  True, DeleteCases[vd, X_[i_, j_] /; Abs[i - j] == 1 ]];
R12Reduce [vd_VD] := FixedPoint[R12Reduce1, vd]

```