```
Exit[]
nn = 5;
a = Join[Table[0, \{i, nn\}], RandomReal[\{0, 10\}, nn^2 - nn]];
b = Join[RandomReal[{0, 10}, nn^2 - nn], Table[0, {i, nn}]];
c = RandomReal[\{-1, 0\}, nn^2] - a - b;
B = SparseArray [\{Band [\{1, 1+nn\}] \rightarrow b[[;; nn ^2 - nn]],
     Band [\{1 + nn, 1\}] \rightarrow a[[nn + 1;;]], Band [\{1, 1\}] \rightarrow c\}, \{nn ^2, nn ^2\};
a = Join[Table[0, \{i, 1\}], RandomReal[\{0, 10\}, nn^2-1]];
b = Join[RandomReal[{0, 10}, nn^2-1], Table[0, {i, 1}]];
c = RandomReal[\{-1, 0\}, nn^2] - a - b;
A = SparseArray [{Band [\{1, 2\}] \rightarrow b[[;; nn ^2 -1]],
    Band [\{1, 1\}] \rightarrow c, Band [\{2, 1\}] \rightarrow a[[2;;]]\}, \{nn^2, nn^2\};
A SparseArray [Join [Table [\{nn i, nn i+1\} \rightarrow 1, \{i, nn-1\}],
    Table [\{nn * i + 1, nn i\} \rightarrow 1, \{i, nn - 1\}]], \{nn ^ 2, nn ^ 2\}];
A // MatrixForm
B // MatrixForm
 -2.01028 1.77769
                                                    0
                                                               0
                             0
                                        0
                                                                           0
                                                                                       0
                                                                                                  0
 0.255154 - 6.68308 6.37043
                                        0
                                                    0
                                                               0
                                                                           0
                                                                                       0
                                                                                                  0
      0
             8.09141
                       -12.3235
                                     4.1926
                                                    0
                                                                           0
                                                                                       0
                                                                                                  0
                 0
                         4.15193 - 9.79971
                                                4.76093
                                                               0
                                                                                                  0
      0
                 0
                                     9.92138
                                               -14.3567 4.23185
      0
                             0
                                                9.08813 -19.5814 9.78676
      0
                 0
                             0
                                                                                       0
                                                                                                  n
                                        0
      0
                 0
                             0
                                                    0
                                                             7.981
                                                                      -9.13621 0.388843
                                        0
                 0
                             0
                                                    0
                                                                       0.437569 - 9.45532 8.38548
      0
                                        0
                                                               0
      0
                 0
                             0
                                        0
                                                    0
                                                               0
                                                                           0
                                                                                   3.27683
                                                                                              -6.89983
                 0
                             0
                                                    0
                                                               0
                                                                           0
                                                                                               4.56406
                                                                                                         - 6
      0
                                        0
                                                                                       0
                 0
                             0
                                                    0
                                                               0
                                                                           0
                                                                                       0
                                                                                                  0
                                                                                                           5
      0
                                        0
                                                               0
                                                                                       0
      0
                 0
                             0
                                        0
                                                    0
                                                                           0
                                                                                                  0
      0
                 0
                             0
                                        0
                                                    0
                                                               0
                                                                                       0
                                                                                                  0
                                                    0
                                                               0
                                                                                       0
      0
                 0
                             0
                                        0
                                                                           0
                                                                                                  0
      0
                 0
                             0
                                        0
                                                    0
                                                               0
                                                                           0
                                                                                       0
                                                                                                  0
      0
                 0
                             0
                                        0
                                                    0
                                                               0
                                                                           0
                                                                                       0
                                                                                                  0
      0
                 0
                             0
                                        0
                                                    0
                                                                                                  0
                                                                                       0
      0
                 0
                             0
                                        0
                                                    0
                                                               0
                                                                           0
                                                                                                  0
      0
                 0
                             0
                                        0
                                                    0
                                                               0
                                                                           0
                                                                                       0
                                                                                                  0
                 0
                             0
                                                               0
                                                                           0
                                                                                       0
      0
                                        0
                                                    0
                                                                                                  0
                                                               0
      0
                 0
                             0
                                        0
                                                    0
                                                                           0
                                                                                       0
                                                                                                  0
      0
                 0
                             0
                                        0
                                                    0
                                                               0
                                                                           0
                                                                                       0
                                                                                                  0
                                                    0
      0
                 0
                             0
                                        0
                                                               0
                                                                           0
                                                                                       0
                                                                                                  0
      0
                 0
                             0
                                        0
                                                    0
                                                               0
                                                                           0
                                                                                       0
                                                                                                  0
                 0
                             0
                                        0
                                                    0
                                                                                                  0
```

 $\ensuremath{\mbox{RecursionLimit}}$  : Recursion depth of 256 exceeded.  $\gg$ 

## Simplify [A.B-B.A] // MatrixForm

0.	-0.178225	0.	0.	-43.8436	84.7677	-37.1462	0.	0.
0.0255807	0.	15.5804	0.	0.	-43.9687	13.8931	17.3027	0.
0.	-19.7895	0.	9.51054	0.	0.	44.4852	-8.78161	-21.6237
0.	0.	-9.41829	0.	-39.5415	0.	0.	9.54629	-2.80181
31.569	0.	0.	82.4011	0.	0.563358	0.	0.	-29.9486
-131.078	81.4881	0.	0.	-1.20984	0.	-10.8948	0.	0.
57.0669	-23.7497	-60.8664	0.	0.	8.88464	0.	1.69835	0.
	-12.5824							
0.	0.	-11.6346	12.8833	-9.38323	0.	0.	7.11812	0.
0.	0.	0.	-13.0608	25.0123	6.84272	0.	0.	12.0534
0.	0.	0.	0.	-71.4929	94.6096	-51.8905	0.	0.
0.	0.	0.	0.	0.	-71.4983	50.2243	-3.47369	0.
0.	0.	0.	0.	0.	0.	60.3096	0.0565234	6.37887
0.	0.	0.	0.	0.	0.	0.	-9.88533	-15.488
0.	0.	0.	0.	0.	0.	0.	0.	0.409061
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.