

File - unknown

```
"/Users/Daantje/Desktop/LMU_Studium/Informatik/Skripte & Co./Master/Masterarbeit/  
quantum_graph_coalition_structure/venv/bin/python" -Xmx6g /Applications/PyCharm.app/  
Contents/plugins/python/helpers/pydev/pydevconsole.py --mode=client --host=127.0.0.1 --  
port=49698
```

```
import sys; print('Python %s on %s' % (sys.version, sys.platform))  
sys.path.extend(['/Users/Daantje/Desktop/LMU_Studium/Informatik/Skripte & Co./Master/  
Masterarbeit/quantum_graph_coalition_structure'])
```

PyDev console: starting.

```
Python 3.10.4 (v3.10.4:9d38120e33, Mar 23 2022, 17:29:05) [Clang 13.0.0 (clang-1300.0.29  
.30)] on darwin  
>>> runfile('/Users/Daantje/Desktop/LMU_Studium/Informatik/Skripte & Co./Master/  
Masterarbeit/quantum_graph_coalition_structure/main.py', wdir='/Users/Daantje/Desktop/  
LMU_Studium/Informatik/Skripte & Co./Master/Masterarbeit/  
quantum_graph_coalition_structure')  
Seed: 3949468976
```

Test for graphsize 14

Graph 0

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...  
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.  
2801666702618846 - Time: 11.399945974349976  
None
```

Graph 1

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...  
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.  
9910337078295726 - Time: 3.071924924850464  
None
```

Graph 2

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...  
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.  
7896917547366726 - Time: 5.237444877624512  
None
```

Graph 3

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...  
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.  
32406091265609405 - Time: 9.987914085388184  
None
```

Graph 4

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...  
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.  
7434000061760955 - Time: 4.830887079238892  
None
```

Graph 5

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
```

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Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
5577618317755935 - Time: 9.963237285614014
None

Graph 6

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8226613726159684 - Time: 9.789740800857544
None

Graph 7

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
072236044635126 - Time: 4.866816997528076
None

Graph 8

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8416300286743024 - Time: 8.96976089477539
None

Graph 9

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
4431815381742013 - Time: 10.505855321884155
None

Graph 10

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
6521493604439357 - Time: 9.06645393371582
None

Graph 11

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
1170498230417039 - Time: 4.664700269699097
None

Graph 12

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
6293034223394756 - Time: 9.076165199279785
None

Graph 13

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
0358230118990974 - Time: 4.670514106750488
None

Graph 14

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
0806199836372201 - Time: 13.020374774932861
None
```

Graph 15

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
6937347837068302 - Time: 5.054516792297363
None
```

Graph 16

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8614475795839951 - Time: 9.705142974853516
None
```

Graph 17

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
9888065387748739 - Time: 11.492788076400757
None
```

Graph 18

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8831225677352705 - Time: 9.40860104560852
None
```

Graph 19

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7870756382366793 - Time: 9.495236158370972
None
```

Test for graphsize 16

Graph 0

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
822906633005644 - Time: 8.873742818832397
None
```

Graph 1

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
02240091914733 - Time: 9.79984998703003
```

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None

Graph 2

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

8919407950075495 - Time: 8.949289798736572

None

Graph 3

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

8449224007561682 - Time: 9.189284086227417

None

Graph 4

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

6262725262860229 - Time: 8.620292901992798

None

Graph 5

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 3.

2643274461642093 - Time: 8.402349948883057

None

Graph 6

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.

3304850667358323 - Time: 8.55962085723877

None

Graph 7

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.

0160665942924254 - Time: 8.555420160293579

None

Graph 8

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

9121356510589749 - Time: 8.757878065109253

None

Graph 9

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

9543621161819686 - Time: 8.685648202896118

None

File - unknown

Graph 10

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8229066330056085 - Time: 8.043822050094604
None

Graph 11

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
0224009191474863 - Time: 8.263571977615356
None

Graph 12

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8919407950071729 - Time: 8.949975967407227
None

Graph 13

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8449224007551734 - Time: 9.074772834777832
None

Graph 14

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
6262725262863498 - Time: 8.48755407333374
None

Graph 15

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
5325696747462771 - Time: 8.380719661712646
None

Graph 16

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
9404045759696231 - Time: 8.587712049484253
None

Graph 17

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
11076397406012 - Time: 8.868558883666992
None

Graph 18

Running 4_split_GCSQ_exactly_qbsolv_parallel...

File - unknown

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
333519919451696 - Time: 9.773185968399048
None

Graph 19

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3821471550545326 - Time: 8.218528032302856
None

Test for graphsize 18

Graph 0

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
22958232134755 - Time: 9.73536205291748
None

Graph 1

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
9642698128749885 - Time: 8.943878889083862
None

Graph 2

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
7324635199480483 - Time: 10.319815158843994
None

Graph 3

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
9489845542806634 - Time: 10.528793096542358
None

Graph 4

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
5284612501546704 - Time: 9.391887903213501
None

Graph 5

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
5069596362593671 - Time: 9.64477801322937
None

Graph 6

File - unknown

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
4521889657959477 - Time: 10.308361053466797
None
```

Graph 7

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
0738307702452161 - Time: 11.58493185043335
None
```

Graph 8

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
9280845774882422 - Time: 9.49113416671753
None
```

Graph 9

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
2154281540707146 - Time: 15.190844774246216
None
```

Graph 10

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
4225599222920451 - Time: 5.110547065734863
None
```

Graph 11

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
2671337334371202 - Time: 2.884917974472046
None
```

Graph 12

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
550146932461665 - Time: 4.7237958908081055
None
```

Graph 13

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
23850950742086496 - Time: 9.104954957962036
None
```

Graph 14

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
5123579767928774 - Time: 8.639832019805908
```

File - unknown

None

Graph 15

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

7876205949141379 - Time: 8.742696046829224

None

Graph 16

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.

0064599804971195 - Time: 9.836463689804077

None

Graph 17

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

9666033216792229 - Time: 10.080221891403198

None

Graph 18

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

939148613571426 - Time: 10.0263090133667

None

Graph 19

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.

8620304898268571 - Time: 9.988723993301392

None

Test for graphsize 20

Graph 0

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.

2286198003634965 - Time: 9.40379285812378

None

Graph 1

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.

146804753056955 - Time: 10.006056070327759

None

Graph 2

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.

File - unknown

1055289628951073 - Time: 9.751504182815552
None

Graph 3

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
9308740224380188 - Time: 9.450442790985107
None

Graph 4

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
759847876834371 - Time: 20.51233196258545
None

Graph 5

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8329240585346938 - Time: 9.58890986442566
None

Graph 6

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
2720059272304098 - Time: 9.168841123580933
None

Graph 7

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
010634009675634 - Time: 10.382877826690674
None

Graph 8

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
9555164697122933 - Time: 10.023341655731201
None

Graph 9

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
1140725334617159 - Time: 9.494646072387695
None

Graph 10

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
1086714555953918 - Time: 9.508526086807251
None

Graph 11

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3901409670808889 - Time: 9.578928232192993
None

Graph 12

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
8273616108029387 - Time: 10.631206750869751
None

Graph 13

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
5096587190417594 - Time: 9.560274362564087
None

Graph 14

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
142733334196528 - Time: 10.397154092788696
None

Graph 15

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
338581728684872 - Time: 8.620760917663574
None

Graph 16

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
4018693972730745 - Time: 10.777806758880615
None

Graph 17

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
516596878262611 - Time: 10.716193199157715
None

Graph 18

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
0512632971854572 - Time: 9.937786102294922
None

Graph 19

File- unknown

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
7348132032658938 - Time: 9.495888233184814
None
```

Test for graphsize 22

Graph 0

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3789109416829959 - Time: 10.169246912002563
None
```

Graph 1

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
1445445552090874 - Time: 9.484752893447876
None
```

Graph 2

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
1527341057839138 - Time: 18.881258964538574
None
```

Graph 3

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 0.
8386235254101209 - Time: 9.669721126556396
None
```

Graph 4

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
4141131952076123 - Time: 9.828673124313354
None
```

Graph 5

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
2311338513693997 - Time: 10.992619037628174
None
```

Graph 6

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9295166795682377 - Time: 8.80646800994873
None
```

Graph 7

File - unknown

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
4769895353490199 - Time: 12.36530590057373
None
```

Graph 8

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
221000462496292 - Time: 9.33337116241455
None
```

Graph 9

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3166678866445665 - Time: 10.172407150268555
None
```

Graph 10

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
4844338943951811 - Time: 9.497464179992676
None
```

Graph 11

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
2221165947339898 - Time: 10.778749227523804
None
```

Graph 12

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
67675443249464 - Time: 11.384146928787231
None
```

Graph 13

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7808146272583585 - Time: 10.761689186096191
None
```

Graph 14

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3645584596682312 - Time: 9.656333923339844
None
```

Graph 15

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
```

File - unknown

2879959041151565 - Time: 13.495226860046387
None

Graph 16

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3757912013005225 - Time: 9.336220741271973
None

Graph 17

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
108844836437882 - Time: 10.101283073425293
None

Graph 18

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3414015011873701 - Time: 11.06381368637085
None

Graph 19

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7448801101228497 - Time: 9.478460311889648
None

Test for graphsize 24

Graph 0

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7010052388675874 - Time: 18.331788063049316
None

Graph 1

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3886139829530038 - Time: 19.583161115646362
None

Graph 2

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
5862663420935306 - Time: 18.157077074050903
None

Graph 3

Running 4_split_GCSQ_exactly_qbsolv_parallel...

File - unknown

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
5924746022500145 - Time: 15.620370864868164
None

Graph 4

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
57079474839486 - Time: 17.66856098175049
None

Graph 5

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3426834078204877 - Time: 18.91915202140808
None

Graph 6

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
4906366941049853 - Time: 13.525810241699219
None

Graph 7

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3171557162028549 - Time: 14.974159955978394
None

Graph 8

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
62116363968439 - Time: 13.015457153320312
None

Graph 9

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
1355862586534258 - Time: 13.938831090927124
None

Graph 10

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3721065249381823 - Time: 17.643948078155518
None

Graph 11

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
5708787552799706 - Time: 17.46184492111206
None

Graph 12

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3241178248075869 - Time: 17.599425077438354
None
```

Graph 13

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
811060936422372 - Time: 18.719784021377563
None
```

Graph 14

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
816278325728014 - Time: 17.781795978546143
None
```

Graph 15

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
4883841820783488 - Time: 14.397411108016968
None
```

Graph 16

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
3263648141889561 - Time: 17.638777256011963
None
```

Graph 17

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7055631245185978 - Time: 14.464452981948853
None
```

Graph 18

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
447440198799562 - Time: 17.65069007873535
None
```

Graph 19

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9196240992240305 - Time: 17.616477966308594
None
```

File- unknown

Test for graphsize 26

Graph 0

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9275312464485168 - Time: 26.953239917755127
None

Graph 1

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9082577259881361 - Time: 20.129777908325195
None

Graph 2

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
5729638131652308 - Time: 18.965667009353638
None

Graph 3

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9552111194626889 - Time: 18.49803376197815
None

Graph 4

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
5029838005635696 - Time: 19.547982215881348
None

Graph 5

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
4744191862071574 - Time: 18.102665901184082
None

Graph 6

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
1619977227798017 - Time: 17.68022894859314
None

Graph 7

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
6961258350955077 - Time: 18.99134612083435
None

File - unknown

Graph 8

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7862359408452448 - Time: 23.38304305076599
None

Graph 9

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
074759205108485 - Time: 37.767539978027344
None

Graph 10

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
837086002332633 - Time: 20.549799919128418
None

Graph 11

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
2409073975555813 - Time: 31.046967029571533
None

Graph 12

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
6794175267784794 - Time: 22.827963829040527
None

Graph 13

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9878145093575128 - Time: 30.420340061187744
None

Graph 14

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
6557715426500152 - Time: 22.254451036453247
None

Graph 15

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9392763337633028 - Time: 23.85104489326477
None

Graph 16

Running 4_split_GCSQ_exactly_qbsolv_parallel...

File - unknown

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
679067250405403 - Time: 21.565741062164307
None

Graph 17

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7729039084590497 - Time: 19.659765005111694
None

Graph 18

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
0167658061418194 - Time: 21.48509907722473
None

Graph 19

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
2023526251088157 - Time: 20.04006004333496
None

Test for graphsize 28

Graph 0

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
098019343698631 - Time: 24.672518730163574
None

Graph 1

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7564689501037805 - Time: 25.8145809173584
None

Graph 2

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9487780294415487 - Time: 20.977622032165527
None

Graph 3

Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
7278676435872669 - Time: 27.530366897583008
None

Graph 4

File - unknown

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
9519000169963547 - Time: 24.89637780189514
None
```

Graph 5

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
844443706537085 - Time: 25.181921243667603
None
```

Graph 6

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
751562178646921 - Time: 22.339431047439575
None
```

Graph 7

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
147540277130666 - Time: 20.584497928619385
None
```

Graph 8

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
450492598571003 - Time: 19.903121948242188
None
```

Graph 9

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
632817062897253 - Time: 20.228238821029663
None
```

Graph 10

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.
0368985620604505 - Time: 19.867146968841553
None
```

Graph 11

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
824350813344246 - Time: 22.544163942337036
None
```

Graph 12

```
Running 4_split_GCSQ_exactly_qbsolv_parallel...
Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.
928146562659343 - Time: 22.510799884796143
```

File - unknown

None

Graph 13

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.

6328182331980727 - Time: 22.676722049713135

None

Graph 14

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.

640450401947703 - Time: 19.450491905212402

None

Graph 15

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.

2890933628745316 - Time: 17.64277458190918

None

Graph 16

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.

569843289461332 - Time: 17.836663961410522

None

Graph 17

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 1.

8604912623196768 - Time: 30.049099683761597

None

Graph 18

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.

2661988687358203 - Time: 19.17784070968628

None

Graph 19

Running 4_split_GCSQ_exactly_qbsolv_parallel...

Coalition structure value for 4_split_GCSQ_exactly_qbsolv_parallel: 2.

2211219918747673 - Time: 19.008671045303345

None

Done running tests for k-split algorithms with qbsolv in True mode for k=4.