```
1 /Users/raven/git_repo/github/agv_codeB/.venv/bin/python /Users/raven/git_repo/
      qithub/aqv_codeB/B_solver.py
  2 {0: 1, 3: 1}
  3 {6: -1, 9: -1}
  4 {2: 0, 5: 0, 8: 0, 11: 0}
  5 \{(0, 3): (0, 1, 4), (0, 11): (0, 1, 2), (2, 0): (0, 1, 2), (3, 2): (0, 1, 2), (3, 1, 2)\}
      6): (0, 1, 4), (5, 3): (0, 1, 2), (6, 5): (0, 1, 2), (6, 9): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0, 1, 4), (8, 6): (0,
      (9, 1, 2), (9, 0): (0, 1, 4), (9, 8): (0, 1, 2), (11, 9): (0, 1, 2)
  6 presolving:
  7 (round 1, fast) 14 del vars, 20 del conss, 0 add conss, 8 chg bounds, 0 chg
      sides, 0 chg coeffs, 0 upgd conss, 0 impls, 8 clgs
  8 (round 2, fast) 14 del vars, 26 del conss, 0 add conss, 8 chg bounds, 0 chg
      sides, 0 chq coeffs, 0 upqd conss, 0 impls, 8 clqs
  9 (round 3, fast) 14 del vars, 26 del conss, 0 add conss, 12 chg bounds, 0 chg
        sides, 0 chg coeffs, 0 upgd conss, 0 impls, 8 clgs
10 (round 4, medium) 17 del vars, 26 del conss, 0 add conss, 12 chg bounds, 0 chg
        sides, 0 chg coeffs, 0 upgd conss, 0 impls, 0 clgs
11 (round 5, fast) 25 del vars, 41 del conss, 0 add conss, 14 chg bounds, 0 chg
        sides, 1 chg coeffs, 2 upgd conss, 0 impls, 0 clgs
12 (round 6, fast) 31 del vars, 46 del conss, 0 add conss, 16 chg bounds, 0 chg
        sides, 2 chg coeffs, 2 upgd conss, 0 impls, 0 clqs
13 presolving (7 rounds: 7 fast, 2 medium, 1 exhaustive):
14 34 deleted vars, 46 deleted constraints, 0 added constraints, 16 tightened bounds
      , 0 added holes, 0 changed sides, 2 changed coefficients
15 0 implications, 0 cliques
16 transformed 1/1 original solutions to the transformed problem space
17 Presolving Time: 0.00
```

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18
19 SCIP Status : problem is solved [optimal solution found]
20 Solving Time (sec): 0.01
21 Solving Nodes
22 Primal Bound
                       : +2.20000000000000e+01 (1 solutions)
23 Dual Bound : +2.20000000000000e+01
24 Gap
                       : 0.00 %
25 Optimal value: 22.0
26 Solution:
27 \times 0_{0} = 1.0
28 \times 0_{3}6 = 1.0
29 \times 3_0_11 = 1.0
30 \times 3_2 = 1.0
31 \times 3_3 = 1.0
32 \times 3_{11} = 1.0
33 \ z0 = 8.0
34 z3 = 8.0
35 \ zOTW9E = 3.0
36 \ z3TW9E = 3.0
37
38 Process finished with exit code 0
39
```