```
-MacBook-Pro: HM4 Linzy$ python3 start_router.py config/large-1
, 0), (6, 6, 12), (10, 10, 17), (3, 3, 8)]
, 0), (6, 6, 12), (10, 10, 17), (3, 3, 8)]
, 0), (3, 3, 8), (10, 3, 21), (8, 3, 24)]
, 0), (3, 3, 8), (10, 3, 21), (8, 3, 24)]
, 0), (3, 3, 8), (10, 3, 21), (8, 3, 24)]
, 0), (3, 3, 8), (10, 3, 21), (8, 3, 24)]
, 0), (3, 3, 8), (10, 3, 37), (8, 3, 40)]
, 0), (3, 3, 8), (10, 3, 53), (8, 3, 56), (6, 6, 12), (5, 6, 19), (2, 6, 25), (6, 9), (3, 3, 8), (10, 3, 53), (8, 3, 56), (6, 6, 12), (5, 6, 19), (2, 6, 25), (6, 9), (3, 3, 8), (10, 3, 53), (8, 3, 56), (6, 6, 12), (5, 6, 19), (2, 6, 25), (6, 9), (3, 3, 8), (10, 3, 53), (8, 3, 56), (6, 6, 12), (5, 6, 19), (2, 6, 25), (6, 9), (3, 3, 8), (10, 6, 59), (6, 6, 12), (5, 6, 19), (2, 6, 25), (6, 9), (3, 3, 8), (10, 6, 50), (8, 6, 59), (6, 6, 12), (5, 6, 19), (2, 6, 25), (6, 9), (3, 3, 8), (10, 6, 44), (8, 6, 59), (6, 6, 12), (5, 6, 19), (2, 6, 25), (6, 9), (3, 3, 8), (10, 6, 44), (8, 6, 59), (6, 6, 12), (5, 6, 19), (2, 6, 25), (8, 9), (3, 3, 8), (10, 6, 44), (8, 6, 59), (6, 6, 12), (5, 6, 19), (2, 6, 25), (8, 9), (3, 3, 8), (10, 6, 44), (8, 6, 71), (6, 6, 12), (5, 6, 19), (2, 6, 25), (8, 9), (3, 3, 8), (10, 3, 36), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (8, 9), (3, 3, 8), (10, 3, 36), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (8, 9), (3, 3, 8), (10, 3, 36), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (8, 9), (3, 3, 8), (10, 3, 36), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (8, 9), (3, 3, 8), (10, 3, 36), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (9, 9), (3, 3, 8), (10, 10, 17), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (9, 9), (3, 3, 8), (10, 10, 17), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (9, 9), (3, 3, 8), (10, 10, 17), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (9, 9), (3, 3, 8), (10, 10, 17), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (9, 9), (3, 3, 8), (10, 10, 17), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (9, 9), (3, 3, 8), (10, 10, 17), (8, 3, 24), (6, 6, 12), (5, 6, 19), (2, 6, 25), (9, 9), (3, 3,
                                                    1,
1,
1,
1,
1,
1,
1,
1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (9,
(9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38),
38),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38),
38),
38),
38),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6, 6, 6, 6, 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (9,
(9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (33), (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30)]
30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30)]
30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
[(1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30)]
30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30),
30),
30),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30)]
30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30),
30),
30),
30),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30)]
30)]
30)]
                                                           1,
1,
1,
1,
1,
1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (7,
(7,
(7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (9,
(9,
(9,
(9,
(9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30),
30),
30),
30),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (7,
(7,
(7,
(7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30)]
[(1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30),
30),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30)]
30)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
```

```
:HW4 linzy$
6), (6, 6,
                                                                                                                                                                                                         config/large-2
                                                                                                              python3 start_router.py
19), (7, 7, 5), (4, 4, 13)]
                                                           5,
                                           (5,
                                                                                                                                (6, 6, 1
, (9, 4,
                                                                                                              19),
20),
                                                                                                                                                            5), (4, 4,
22)]
                (5,
(4,
                                                          5,
4,
4,
                                                                     6),
13),
                                                                     13),
                                                                                       (9,
(9,
                                                                                                       4, 20),
5, 17),
                                                                                                                 20),
                                          22)]
                                                                      13),
                                                                                                                                                              22),
                                                                                                                                                                                  (5, 5, 6),
                                                                                                                                                                                                                           (6, 5,
                                                                                                       5, 17),
5, 17),
                                                                      13),
                                                                                                                                     (8,
(8,
                                                                                                                                                   4,
5,
                                                                                                                                                               22),
                                                                                                                                                                                                            6),
                                                                                                                                                                                                                           (6,
(6,
                                                                                                                                                                                 5,
                                                                                       (9,
                                                                                                                                                                                                                                                      13)]
                                                                     13),
                                                                                        (9,
                                                                                                                 17),
                                                                                                                                                               34),
                                                                                                                                                                                                                                          5,
                                                                                                                                                                                                                                                    13)]
[(2,
                                                                                                       5,
5,
5,
                                                                                                                                                               34),
                                                                                       (9,
(9,
                                                                                                                  17),
17),
                                                                                                                                     (8,
(8,
                                                                                                                                                                                                                                                      13),
                                                                      13),
                                                                                                                                                     5,
                                                                                                                                                                                                                                          5,
                                                                                                                                                                                                                                                                        (1, 5, 25)
                                                                                                                                                                                                           5,
5,
                                                                                                                                                                                                                                                                        (1, 5, (1, 5,
                                                                     13),
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                     13),
13),
                                                                                                                                                                                                                                                                                                  25),
25),
[(2,
                                                                                                                                                                34),
                                                                                                                                                                                                                                                                                                                     (3, 5,
                                                                                                                                                                                                                                                                                                                                               33), (10, 5, 78)]
                                                                                                                                                               34),
[(2,
[(2,
                                                                      13),
                                                                                                                   17),
                                                                                                                                     (8,
(8,
(8,
(8,
                                                                                        (9,
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                                 33),
                                                                                                                                                                                                                                                                                                                                                                   (10,
                                                                                                                                                                                                                                                                       (1, 5,
(1, 5,
(1, 5,
(1, 5,
                                                                                       (9,
(9,
(9,
                                                                                                       5,
5,
                                                                                                                  29),
29),
                                                                                                                                                    5,
5,
                                                                                                                                                               46),
46),
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                    13),
13),
                                                                                                                                                                                                                                                                                                                                                33),
                                                                                                                                                                                                                                                                                                                                                                  (10,
(10,
                                                                      13),
                                                                                                                                                                                                                                                                                                   25),
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                                                                                      5,
                                                                                                                                                                                                                                                                                                                                                                                                  78)]
                                                                      13),
                                                                                                                                                                                                                                                                                                   25),
                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                                 33),
                                                                                                                                                                                                                                                                                                                                                                                                  19),
                                                                                       (9, 5,
(9, 7,
(9, 7,
(9, 7,
[(2,
[(2,
                                                                                                                 29),
                                                                                                                                                               46),
56),
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                    13),
                                                                                                                                                                                                                                                                                                   25),
25),
                                                                                                                                                                                                                                                                                                                                    5,
5,
                                                                                                                                                                                                                                                                                                                                                                                                                                 7,
7,
                                                                                                                                                                                                                                                                                                                                                33),
                                                                                                                                                                                                                                                                                                                                                                                                 19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                   (7,
(7,
                                                                      13),
                                                                                                                                    (3,
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                      13),
                                                                                                                                                                                                                                                    13),
                                                                                                                   39),
                                                                                                                                                                                                                                                                                                                                                33),
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                                                   (10,
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                    13),
[(2,
[(2,
                                                                     13),
                                                                                                                   39),
                                                                                                                                                                                                                                                                                                  25),
25),
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                                                                                19),
29),
                                                                                                                                                             (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1, 5, (1
                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                                                33),
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                     13),
                                                                                                                  49),
                                                                                                                                                                                                                                                    13),
                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                 33),
                                                             (9, 7, 49)
(1, 13), (9, 5, 17)
(1, 13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(13), (9, 5, 17)
(14), (15)
(15), (17)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17), (18)
(17)
[(2,
[(2,
                                                                     13),
                                                                                                                   49),
                                                                                                                                                                                                                                          5, 13),
                                                                                                                                                                                                                                                                                                                                                 33),
                                                                                       (9,
                                                                                                       7,
                                                                                                                                                                                                                                                                                                   25),
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                                                                   (10,
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                    13),
13),
                                                                                                                                                                                                                                                                                                                                                33), (10,
33), (10,
33), (10,
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                   25),
                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                                                                                                  29),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
[(2,
[(2,
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                 25),
25),
25),
25),
25),
25),
25),
                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                                                                                                                                                                  29),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                                                                                                                                                                 34),
                                                                                                                                                                                                                                                    13),
                                                                                                                                                                                                                                                                                                                                     5,
                                                                                                                                                                                                                                                     13),
                                                                                                                                                                                                                                                                                                                                                                                                 19),
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
[(2,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                    (7,
                                                                                                                                                                                                                                                                                                                                                                                                                   (7,
(7,
(7,
(7,
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                                                                 (10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                 19),
19),
[(2,
                                                                                                                                                                                                                                                     13),
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                                                      7,
                                                                                                                                                                                                                                          5,
5,
5,
5,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                     13),
[(2,
[(2,
[(2,
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                    13),
13),
13),
13),
                                                                                                                                                                                                                                                                                                                                    7,
7,
                                                                                                                                                                                                                                                                                                                                                                                                 19),
19),
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                                                32), (10,
32), (10,
32), (10,
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                 25),
25),
25),
25),
[(2,
[(2,
                                                                                                                                                                                                                                                                                                                     (3,
(3,
(3,
(3,
                                                                                                                                                                                                                                                                                                                                    7,
7,
                                                                                                                                                                                                                                                                                                                                                                                                19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                  7,
                                                                                                                                                                                                                                                                                                                                                                                      7,
                                                                                                                                                                                                                                                                                                                                                                                                                   (7,
(7,
(7,
(7,
(7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                          5, 13),
5, 13),
5, 13),
5, 13),
5, 13),
[(2,
[(2,
                                                                                                                                                                                                                                                                                                                                                                                                19),
19),
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                                                               32), (10,
32), (10,
32), (10,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                                                      7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                 25),
25),
25),
25),
25),
25),
25),
                                                                                                                                                                                                                                                                                                                     (3,
(3,
                                                                                                                                                                                                                                                                                                                                                                                                19),
19),
19),
[(2,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
[(2,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                                                                32), (10,
32), (10,
32), (10,
[(2,
[(2,
[(2,
                                                                                                                                                                                                                                                                                                                                     7,
7,
                                                                                                                                                                                                                                                                                                                                                                                                                    (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                                                                                                                                                                 19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                     13),
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                                                                      7,
                                                                                                                                                                                                                                                                                                                                                                                                                   13),
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                         5,
5,
5,
                                                                                                                                                                                                                                                                                                                                                                                                19),
19),
                                                                                                                                                                                                                                                    13),
13),
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                    7,
7,
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)7
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                                                                 (10,
(10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                             5)]
[(2,
                                                                                                                                                                                                                                                    13),
                                                                                                                                                                                                                                                                                                  25), (3,
25), (3,
25), (3,
25), (3,
[(2,
[(2,
                                                                                                                                                                                                                                                                                                                                    7,
7,
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                                                19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                  7,
7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                    13),
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                                                                                                                 19),
[(2,
[(2,
                                                                                                                                                                                                                                                    13),
                                                                                                                                                                                                                                          5,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                                                               32), (10,
32), (10,
32), (10,
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                    13),
13),
                                                                                                                                                                                                                                                                                                                                                                                                 19),
                                                                                                                                                                                                                                                                                                                                                                                                                    (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                                                                                                                                   (7,
(7,
                                                                                       (9,
(9,
                                                                                                                  17),
                                                                                                                                                                                                                                                                                                   25),
                                                                                                                                                                                                                                                                                                                     (3,
(3,
                                                                                                                                                                                                                                                                                                                                                                                                 19),
                                                                                                       5,
5,
5,
5,
5,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                 17),
17),
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                                                                   25),
25),
                                                                                                                                                              22),
22),
22),
22),
22),
22),
22),
                                                                                                                                                                                                                                                    13),
                                                                                                                                                                                                                                                                                                                                                                                                 19),
                                                                      13),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                     13),
                                                                                                                                                                                                                                                                                                                                                                                                 19),
                                                                      13),
                                                                                        (9,
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                                                                    (7,
[(2,
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                                                   (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                       (9,
(9,
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                    13),
13),
                                                                                                                                                                                                                                                                                                  25),
25),
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                                                                                                19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                   (7,
(7,
                                                                     13),
13),
                                                                                                                 17),
                                                                                                                                                                                                                                                                        (1,
                                                                                                                                                                                                                                                                                      5,
5,
5,
                                                                                                                                                                                                                                                                                                                                     7,
                                                                                                                                                                                                                                                                                                                                                                   (10,
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                 17),
                                                                                                                                                                                                                                                                         (1,
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                    (8, 4,
(8, 4,
(8, 4,
                                                                                                                                                                                                                                          5,
5,
                                                                                                                                                                                                                                                    13),
                                                                                       (9,
(9,
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                                                                                                 19),
19),
                                                                      13),
                                                                                                                   17),
                                                                                                                                                                                                                           (6,
(6,
(6,
(6,
(6,
                                                                                                                                                                                                                                                                         (1,
                                                                                                                                                                                                                                                                                                   25),
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                                                  (10,
                                                                                                                                                                                                                                                                                                                                                                                                                    (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
[(2,
                                                                                                                  17),
                                                                                                                                                                                                                                                     13),
13),
                                                                                                                                                                                                                                                                                                   25),
                                                                      13),
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                         (1,
                                                                                                                                                                                                                                                                                                                                                                   (10,
                                                                                                                                                                                                                                                                                                                      (3,
                                                                                                                                                                                                                                                                                                                                                                                                                    (7,
                                                                                                                                                                                                                                                                                                                                                                  (10,
(10,
                                                                     13),
                                                                                       (9,
(9,
                                                                                                       5,
5,
                                                                                                                                     (8,
                                                                                                                                                                                                                                                                        (1,
(1,
                                                                                                                                                                                                                                                                                                                     (3,
                                                                                                                                                                                                                                                                                                                                     7,
7,
                                                                                                                                                                                                                                                                                                                                                                                                 19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                   (7,
(7,
                                                                                                                                                                                                                                          5,
5,
5,
                                                                                                                                                                                                                                                                                                                                                 32),
[(2,
                                                                                                                    17),
                                                                                                                                                                                                                                                                                       5,
5,
5,
                                                                                                                                                                                                                                                                                                   25),
                                                                                                                                                                                                                                                                                                                                                                                      7,
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                               22),
22),
                                                                                                                                                                                                                                                                                                   25),
25),
                                                                      13),
                                                                                                                  17),
                                                                                                                                                    4,
                                                                                                                                                                                                                                                      13),
[(2,
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                       5, 17),
5, 17),
                                                                                                                                                    4,
4,
                                                                      13),
                                                                                       (9,
(9,
                                                                                                                                                                                                                                                                                                                     (3,
(3,
                                                                                                                                                                                                                                                                                                                                    7,
7,
                                                                                                                                                                                                                                                                                                                                                                                     7,
7,
                                                                                                                                                                                                                                                     13),
                                                                                                                                                                                                                                                                                                                                                 32),
                                                                                                                                      (8,
                                                                                                                                                                                                                                                                         (1,
                                                                                                                                                                                                                                                                                                                                                                   (10,
                                                                                                                                                                                                                                                                                                                                                                                                  19),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)]
                                                                                                                                                                                                                                                                                                   25),
                                                                      13),
                                                                                                                                      (8,
                                                                                                                                                               22),
                                                                                                                                                                                                                                                      13),
                                                                                                                                                                                                                                                                         (1,
                                                                                                                                                                                                                                                                                                                                                32),
                                                                                                                                                                                                                                                                                                                                                                                                  19),
                                                                                                                                                                                                                                                                                                                                                                                                                                              5)
                                                                                                                                                                                                                                                                                                                                                                   (10,
                                                                                                                                                                                                                                                                                                                                                                                                                    (7,
                                                                                                                                                                                                                                                      13),
                                                                                                                                                                22).
                                                                                                                    17)
                                                                                                                                                                                                 5
                                                                                                                                                                                                                                          5,
                                                                                                                                                                                                                                                                         (1,
                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                   25),
                                                                                                                                                                                                                                                                                                                                                                   (10
                                                                                                                                                                                                                                                                                                                                                                                                  19)
```

```
linzys-MacBook-Pro:HW4 linzy$ python3 start_router.py config/large-3
[(3, 3, 0), (1, 1, 8), (10, 10, 13), (8, 8, 16)]
[(3, 3, 0), (1, 1, 8), (10, 10, 13), (8, 8, 16)]
[(3, 3, 0), (1, 1, 8), (10, 1, 29), (8, 1, 32)]
[(3, 3, 0), (1, 1, 8), (10, 1, 29), (8, 1, 32)]
[(3, 3, 0), (1, 1, 8), (10, 1, 45), (8, 1, 48)]
[(3, 3, 0), (1, 1, 8), (10, 1, 45), (8, 1, 48), (6, 1, 20), (5, 1, 27), (2, 1, 39)]
[(3, 3, 0), (1, 1, 8), (10, 1, 45), (8, 1, 48), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50)]
[(3, 3, 0), (1, 1, 8), (10, 1, 45), (8, 1, 48), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50)]
[(3, 3, 0), (1, 1, 8), (10, 1, 45), (8, 1, 48), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 64), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 64), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 64), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 64), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 67), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 67), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 67), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 67), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 67), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 1, 52), (8, 1, 67), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 1, 46), (9, 1, 50), (7, 1, 38)]
[(3, 3, 0), (1, 1, 8), (10, 8, 28), (8, 8, 16), (6, 1, 20), (5, 1, 27), (2, 1, 33), (4, 8, 25), (9, 1, 62), (7, 1, 38)]
[(3, 3, 0), (1, 1,
```

```
Linzys-Mac8ook-Pro:HM4 Linzy$ python3 start_router.py config/large-4
[(4, 4, 0), (9, 9, 7), (2, 2, 13), (8, 8, 9)]
[(4, 4, 0), (9, 9, 7), (2, 2, 13), (8, 8, 9), (5, 2, 19), (6, 2, 26)]
[(4, 4, 0), (9, 9, 7), (2, 2, 13), (8, 8, 9), (5, 2, 19), (6, 2, 26)]
[(4, 4, 0), (2, 2, 13), (9, 2, 30), (8, 2, 35), (5, 2, 19), (6, 2, 26), (1, 2, 38)]
[(4, 4, 0), (2, 2, 13), (9, 2, 30), (8, 2, 35), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 91)]
[(4, 4, 0), (2, 2, 13), (9, 2, 30), (8, 2, 35), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 91)]
[(4, 4, 0), (2, 2, 13), (9, 2, 30), (8, 2, 47), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 91)]
[(4, 4, 0), (2, 2, 13), (9, 2, 30), (8, 2, 47), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 91)]
[(4, 4, 0), (2, 2, 13), (9, 2, 30), (8, 2, 47), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 91)]
[(4, 4, 0), (2, 2, 13), (9, 2, 30), (8, 2, 47), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 91)]
[(4, 4, 0), (2, 2, 13), (9, 2, 42), (8, 2, 59), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 32), (7, 2, 18)]
[(4, 4, 0), (2, 2, 13), (9, 2, 52), (8, 2, 59), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 32), (7, 2, 18)]
[(4, 4, 0), (2, 2, 13), (9, 2, 52), (8, 8, 9), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 46), (10, 2, 32), (7, 2, 18)]
[(4, 4, 0), (2, 2, 13), (9, 2, 52), (8, 8, 9), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 2, 59), (10, 2, 32), (7, 2, 18)]
[(4, 4, 0), (2, 2, 13), (9, 2, 52), (8, 8, 9), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 8, 25), (10, 8, 21), (7, 2, 18)]
[(4, 4, 0), (2, 2, 13), (9, 2, 52), (8, 8, 9), (5, 2, 19), (6, 2, 26), (1, 2, 38), (3, 8, 25), (10, 8, 21), (7, 2, 18)]
[(4, 4, 0), (2, 2, 13), (9, 2, 52), (8, 8, 9), (5, 2, 19), (6, 2, 26), (1, 8, 33), (3, 8, 25), (10, 8, 21), (7, 2, 18)]
[(4, 4, 0), (2, 2, 13), (9, 2, 7), (8, 8, 9), (5, 9, 18), (6, 9, 25), (1, 8, 33), (3, 8, 25), (10, 8, 21), (7, 2, 18)]
[(4, 4, 0), (2, 2, 13), (9, 9, 7), (8, 8, 9), (5, 9, 18), (6, 9, 25), (1, 8, 33), (3, 8, 25)
```

```
# linzy$ python3 start_router.py config/large-5
, (2, 2, 6), (9, 9, 11)]
, (2, 2, 6), (9, 9, 11), (4, 2, 19), (8, 2, 28)]
, (2, 2, 6), (9, 9, 11), (4, 2, 19), (8, 2, 28)]
, (4, 2, 19), (9, 2, 23), (8, 2, 40), (6, 6, 7),
, (4, 2, 19), (9, 2, 23), (8, 2, 40), (6, 6, 7),
, (4, 2, 19), (9, 2, 35), (8, 2, 52), (6, 6, 7),
, (4, 2, 19), (9, 2, 35), (8, 2, 52), (6, 6, 7),
, (4, 2, 19), (9, 2, 35), (8, 2, 52), (6, 6, 7),
, (4, 2, 19), (9, 2, 35), (8, 2, 52), (6, 6, 7),
, (4, 2, 19), (9, 2, 35), (8, 2, 52), (6, 6, 7),
, (4, 2, 19), (9, 2, 45), (8, 2, 62), (6, 6, 7),
, (4, 2, 19), (9, 2, 45), (8, 2, 28), (6, 6, 7),
, (4, 2, 19), (9, 2, 45), (8, 2, 28), (6, 6, 7),
, (4, 2, 19), (9, 2, 45), (8, 2, 28), (6, 6, 7),
, (4, 2, 19), (9, 2, 55), (8, 2, 28), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18), (9, 9, 11), (8, 9, 27), (6, 6, 7),
, (4, 9, 18),
linzys-MacBook-Pro:HW4
[(5, 5, 0), (6, 6, 7),
[(5, 5, 0), (6, 6, 7),
[(5, 5, 0), (6, 6, 7),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
[(5, 5, 0), (2, 2, 6),
                                                                                                                                                                                                                          11), (4, 2, 19), (23), (8, 2, 40), 23), (8, 2, 40), 23), (8, 2, 40), 35), (8, 2, 52), 35), (8, 2, 52), 45), (8, 2, 52), 45), (8, 2, 28), 45), (8, 2, 28), 45), (8, 2, 28), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), (8, 9, 27), 11), 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \vec{u}_{i}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (10,
(10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6, 6, 6, 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3,
(3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        72)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        72)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
25),
25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3,
(3,
(3,
(3,
(3,
(3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7, 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (10,
(10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                              2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
(7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                (10,
(10,
(10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
35),
35),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3,
(3,
(3,
(3,
(3,
(3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (10,
(10,
(10,
(10,
(10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      39),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6, 6, 6, 6, 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
(7,
(7,
(7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        36),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
25),
25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3,
(3,
(3,
(3,
(3,
(3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (10,
(10,
(10,
(10,
(10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
(7,
(7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6, 6, 6, 6, 6, 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
25),
25),
25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
(7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                               9, 9, 9, 9, 9, 9, 9, 9, 9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (6,
(6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19),
19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (6,
(6,
(6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6,
6,
6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3,
(3,
(3,
(3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (10,
(10,
(10,
(10,
(10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (6,
(6,
(6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27),
27),
27),
27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6,
6,
6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
2,
2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25),
25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (7,
(7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                            (4,
                                                                                                                                                                                                                                                                 9,
                                                                                                                                                                                                                                                                                              18),
                                                                                                                                                                                                                                                                                                                                             (9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
```

```
[Linzys-MacBook-Pro:HW4 Linzy$ python3 start_router.py config/large-6
[(6, 6, 0), (5, 5, 7), (1, 1, 12), (2, 5, 13), (4, 5, 26), (9, 5, 30), (8, 5, 47)]
[(6, 6, 0), (5, 5, 7), (1, 1, 12), (2, 5, 13), (4, 5, 26), (9, 5, 30), (8, 5, 47)]
[(6, 6, 0), (5, 5, 7), (1, 1, 12), (2, 5, 13), (4, 5, 26), (9, 5, 30), (8, 5, 47), (3, 1, 20), (10, 1, 65)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 42), (8, 5, 59), (1, 1, 12), (3, 1, 20), (10, 5, 79)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 42), (8, 5, 59), (1, 1, 12), (3, 1, 20), (10, 5, 79)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 42), (8, 5, 59), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 42), (8, 5, 59), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 42), (8, 5, 59), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 42), (8, 5, 59), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 52), (8, 5, 69), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 52), (8, 5, 69), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 52), (8, 5, 35), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 52), (8, 5, 35), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 62), (8, 5, 35), (1, 1, 12), (3, 1, 20), (10, 5, 32), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 62), (8, 5, 35), (1, 1, 12), (3, 1, 20), (10, 5, 42), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 26), (9, 5, 62), (8, 5, 35), (1, 1, 12), (3, 1, 20), (10, 5, 42), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 25), (9, 5, 18), (8, 5, 34), (1, 1, 12), (3, 1, 20), (10, 5, 42), (7, 5, 18)]
[(6, 6, 0), (5, 5, 7), (2, 5, 13), (4, 5, 25),
```

```
linzys-MacBook-Pro:HW4 linzy$ python3 start_router.py config/large-7
[(77, 7, 0), (10, 10, 14), (2, 2, 5)]
[(77, 7, 0), (10, 10, 14), (2, 2, 5), (4, 2, 18), (9, 2, 34), (8, 2, 51), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 2, 38)]
[(77, 7, 0), (10, 10, 14), (2, 2, 5), (4, 2, 18), (9, 2, 34), (8, 2, 51), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 2, 38)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 44), (8, 2, 61), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 2, 38), (10, 2, 24)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 44), (8, 2, 72), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 2, 38), (10, 2, 24)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 44), (8, 2, 27), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 2, 38), (10, 2, 24)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 2, 27), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 2, 38), (10, 2, 24)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 2, 27), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 2, 38), (10, 2, 24)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 2, 27), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 2, 38), (10, 2, 34)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 10, 26), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 10, 27), (10, 10, 14)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 10, 26), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 10, 27), (10, 10, 14)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 10, 26), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 10, 27), (10, 10, 14)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 10, 26), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 10, 27), (10, 10, 14)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 10, 26), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 10, 27), (10, 10, 14)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 10, 26), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 10, 27), (10, 10, 14)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 10, 26), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3, 10, 27), (10, 10, 14)]
[(77, 7, 0), (2, 2, 5), (4, 2, 18), (9, 2, 22), (8, 10, 26), (5, 2, 11), (6, 2, 18), (1, 2, 30), (3,
```

```
49), (9, 3, 78), (7, 3, 54)]

, 22), (9, 4, 61), (7, 4, 27)]

22), (9, 4, 16), (7, 4, 27)

(9, 4, 16), (7, 4, 27)

(7, 4, 27)

(7, 4, 27)
                                                                                                                linzy$ python3 start_router.py config/large-8
, (10, 10, 12), (4, 4, 9)]
, (10, 10, 12), (4, 4, 9), (1, 3, 24), (6, 3, 36), (5, 3, 43), (2, 3, 4), (10, 10, 12), (4, 4, 9), (1, 3, 24), (6, 4, 35), (5, 4, 28), (2, 4, 2), (10, 10, 12), (4, 4, 9), (1, 3, 24), (6, 4, 35), (5, 4, 27), (2, 4, 2), (10, 10, 12), (4, 4, 9), (1, 3, 24), (6, 4, 34), (5, 4, 27), (2, 4, 2), (10, 10, 12), (4, 4, 9), (1, 3, 24), (6, 4, 34), (5, 4, 27), (2, 4, 2), (10, 10, 12), (4, 4, 9), (1, 3, 24), (6, 4, 34), (5, 4, 27), (2, 4, 2), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3, 24), (10, 10, 12), (6, 4, 34), (5, 4, 27), (2, 4, 22), (4, 4, 4), (1, 3,
              -MacBook-Pro:HW4 linzy$ python3 start_router.py config/large-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                              (10,
                                                                                                                                                        10, 12),
                                                                                                                                                                                                                                                          9)]
                   0),
                                             (3,
                                                                     3,
                                                                                        16),
                                                                                         16),
                                                                      3,
3,
                                                                                         16),
8,
                                                                                        16),
                                                                                        16),
                                                                       3, 16),
                                                                                        16),
                                                                                         16),
                                                                     3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
3, 16),
                                            (3,
(3,
                                            (3,
(3,
(3,
 8,
8,
                                            (3,
(3,
(3,
                   0),
                     0),
                                            (3,
(3,
(3,
  8,
8,
8,
                                             (3,
(3,
(3,
                   0),
                                                                     3,
  8,
8,
8,
                                            (3,
(3,
(3,
                                                                                        16),
16),
16),
                      0),
                                                                       3,
                                                                                                                                               3, 3, 3, 3, 3,
                   0),
0),
0),
0),
                                             (3, (3, (3, (3,
  8,
8,
8,
                                                                                        16),
16),
16),
                                                                      3, 3, 3, 3,
  8,
                                                                                         16),
                                                                                                                                                                                                                                                          12),
                                                                                                                                                                                                                                                                                                                                                                                                                27),
                                                                                         16),
                                                                                                                                                                   24),
                     0),
                                                (3,
                                                                                                                         (1,
                                                                                                                                                                                                     (10,
                                                                                                                                                                                                                                   10,
                                                                                                                                                                                                                                                                                                                   4,
                                                                                                                                                                                                                                                                                                                                       34),
                                                                                                                                                                                                                                                                                                                                                                                              4,
                                                                                                                                                                                                                                                                                            (6,
                                                                                                                                                                                                                                                                                                                                                                      (5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (2,
```

```
[linzys-MacBook-Pro:HW4 linzy$ python3 start_router.py config/large-9 [(9, 9, 0), (5, 5, 11), (4, 4, 7)] [(9, 9, 0), (5, 5, 11), (4, 4, 7), (2, 4, 20), (8, 4, 16), (6, 4, 33) [(9, 9, 0), (5, 5, 11), (4, 4, 7), (2, 5, 17), (8, 4, 16), (6, 5, 18) [(9, 9, 0), (5, 5, 11), (4, 4, 7), (2, 5, 17), (8, 4, 16), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 5, 11), (6, 5, 18) [(9, 9, 0), (4, 4, 7), (2, 5, 17), (8, 4, 16), (5, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (3, 4, 32), (10, 4, 28), (7, 4, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10, 4, 28), (7, 5, 34, 32), (10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40),
30),
30),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25)]
22)]
22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22)]
22)]
22)]
22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30),
30),
30),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22)]
22)]
22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22)]
22)]
22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22)]
22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30),
30),
30),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22)]
22)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22)]
                                                                                                                                                                                                                                                                                                                              7),
                                                                                                                                                                                                                                                                                                                                                                                               (2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17), (8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22)]
```

```
[(10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, [(10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, [(10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, [(10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, 7, 12)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (9, 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (6, 1, 29),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (5, 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (2, 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47)7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (5, 1,
(5, 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (4, 1,
(4, 3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (9, 1,
(9, 3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1, 29),
1, 29),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1, 42),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36), (2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       47)]
[(10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, 14), (6, 1, 29), (5, 1, 1), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, 14), (6, 1, 29), (5, 1, 1), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, 14), (6, 1, 29), (5, 1, 1), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, 14), (6, 1, 29), (5, 7, 1), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, 14), (6, 1, 29), (5, 7, 1), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (7, 7, 14), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 0), (1, 1, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 10, 11, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 10, 11, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 10, 11, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 10, 11, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 10, 11, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 10, 11, 17), (3, 3, 13), (8, 8, 12), (6, 1, 29), (5, 7, 25), (2, 7, 10), (10, 10, 10, 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36), (2, 8, 34),
25), (2, 7, 19),
25), (2, 7, 19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (4, 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (9, 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (4, 8,
(4, 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21), (9, 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (9, 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (4, 8, 21), (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (7, 7, (7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (4, 8, 21), (9, 8, 19), (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (7, 7,
(7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (7, 7, (7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28), (7, 7,
28), (7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (7, 7,
(7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
[(10, 10, 0), (1, 1, 17), (1, 10, 10), (1, 1, 17), (1, 10, 10), (1, 1, 17), (3, 3, 17), (10, 10), (1, 1, 17), (3, 3, 17), (10, 10, 10), (1, 1, 17), (3, 3, 17), (10, 10, 0), (1, 1, 17), (3, 3, 17), (10, 10, 0), (1, 1, 17), (3, 3, 17), (10, 10, 0), (1, 1, 17), (3, 3, 17), (10, 10, 0), (1, 1, 17), (3, 3, 17), (10, 10, 0), (1, 1, 17), (3, 3, 17), (10, 10, 10), (1, 1, 17), (3, 3, 17), (3, 3, 17), (3, 3, 17), (3, 3, 3, 17), (3, 3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 3, 3), (3, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (7, 7,
(7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28), (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (5, 7, 25),
(5, 7, 25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28),
                                                                                                                                                                                                                                                                                                                    13), (8, 8, 12), (6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14)]
                                                                                                                                                                                                                                                                                                                   13), (8, 8, 12), (6, 1, 13), (8, 8, 12), (6, 1, 13), (8, 8, 12), (6, 1, 13), (8, 8, 12), (6, 1, 13), (8, 8, 12), (6, 1, 13)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (5, 7, 25),
(5, 7, 25),
(5, 7, 25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (2, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14)]
       [(10, 10, 0), (1, 1, 17), (3, 3, [(10, 10, 0), (1, 1, 17), (3, 3, [(10, 10, 0), (1, 1, 17), (3, 3, [(10, 10, 0), (1, 1, 17), (3, 3, 3, 1)]
                                                                                                                                                                                                                                                                                                                    13), (8, 8, 12), (6, 1, 13), (8, 8, 12), (6, 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29), (5, 7, 25), (2, 7, 29), (5, 7, 25), (2, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (7, 7, (7, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14)]
                                                                                                                                                                                                                                                                                                                   13),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21),
                                                                                                                                                                                                                                                                                                                                                                  (8, 8, 12),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (2, 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (9, 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14)
```