POPULATION AVERAGES FOR STRATA CRITERIA

Overview

This supplemental document provides tables used to inform the strata viability criteria as outlined in the Interim Report on Viability Criteria for Willamette and Lower Columbia Basin Pacific Salmonids (McElhany et al. 2003, page 14). Each table lists combinations of population persistence categories for strata with a given number of historical populations. All of the combinations with at least two populations of category 3 are listed. The average of the population persistence category values are calculated for each combination and the combinations are sorted in descending order by the average. The tables can be used to help identify appropriate thresholds of the population persistence average for strata criteria. The TRT identified potential thresholds shown in Table C.1. In the combination tables (Tables C.2 to C.10), the high strata persistence combinations have a white background, the moderate strata persistence combinations have a gray background, and the low strata persistence combinations have a black background.

Table 1 Stratum persistence categories based on averages of individual population risks. The category thresholds are based on professional judgment.

Stratum Persistence Probability Category	**Average of Population Risks**
Low persistence	Average < 2
Moderate persistence	2 < = Average < 2.25; at least two populations > = 3
High persistence	Average > = 2.25; at least two populations > = 3

Table 2 Combinations of population persistence categories for strata with two historical populations.

Pop 1	**Pop 2**	**Average**
4	4	4
4	3	3.5
3	3	3

Table 3 Combinations of population persistence categories for strata with three historical populations.

Pop 1	**Pop 2**	**Pop 3**	**Average**
4	4	4	4.00
4	4	3	3.67
4	4	2	3.33

4	3	3	3.33
4	4	1	3.00
4	3	2	3.00
3	3	3	3.00
4	4	0	2.67
4	3	1	2.67
3	3	2	2.67
4	3	0	2.33
3	3	1	2.33
3	3	0	2.00

Table 4 Combinations of population persistence categories for strata with four historical populations.

Pop 1	Pop 2	Pop 3	Pop 4	Average
4	4	4	4	4
4	4	4	3	3.75
4	4	4	2	3.5
4	4	3	3	3.5
4	4	4	1	3.25
4	4	3	2	3.25
4	3	3	3	3.25
4	4	4	0	3
4	4	3	1	3
4	4	2	2	3
4	3	3	2	3
3	3	3	3	3
4	4	3	0	2.75
4	4	2	1	2.75
4	3	3	1	2.75
4	3	2	2	2.75
3	3	3	2	2.75
4	4	2	0	2.5
4	4	1	1	2.5
4	3	3	0	2.5
4	3	2	1	2.5
3	3	3	1	2.5
3	3	2	2	2.5
4	4	1	0	2.25
4	3	2	0	2.25
4	3	1	1	2.25
3	3	3	0	2.25
3	3	2	1	2.25
4	4	0	0	2
4	3	1	0	2
3	3	2	0	2
3	3	1	1	2

4	3	0	0	1.75
3	3	1	0	1.75
3	3	0	0	1.5

Table 5 Combinations of population persistence categories for strata with five historical populations.

Pop 1	Pop 2	Pop 3	Pop 4	Pop 5	Average
4	4	4	4	4	4
4	4	4	4	3	3.8
4	4	4	4	2	3.6
4	4	4	3	3	3.6
4	4	4	4	1	3.4
4	4	4	3	2	3.4
4	4	3	3	3	3.4
4	4	4	4	0	3.2
4	4	4	3	1	3.2
4	4	4	2	2	3.2
4	4	3	3	2	3.2
4	3	3	3	3	3.2
4	4	4	3	0	3
4	4	4	2	1	3
4	4	3	3	1	3
4	4	3	2	2	3
4	3	3	3	2	3
3	3	3	3	3	3
4	4	4	2	0	2.8
4	4	4	1	1	2.8
4	4	3	3	0	2.8
4	4	3	2	1	2.8
4	4	2	2	2	2.8
4	3	3	3	1	2.8
4	3	3	2	2	2.8
3	3	3	3	2	2.8
4	4	4	1	0	2.6
4	4	3	2	0	2.6
4	4	3	1	1	2.6
4	4	2	2	1	2.6
4	3	3	3	0	2.6
4	3	3	2	1	2.6
4	3	2	2	2	2.6
3	3	3	3	1	2.6
3	3	3	2	2	2.6
4	4	4	0	0	2.4
4	4	3	1	0	2.4
4	4	2	2	0	2.4
4	4	2	1	1	2.4
4	3	3	2	0	2.4

4	3	3	1	1	2.4
4	3	2	2	1	2.4
3	3	3	3	0	2.4
3	3	3	2	1	2.4
3	3	2	2	2	2.4
4	4	3	0	0	2.2
4	4	2	1	0	2.2
4	4	1	1	1	2.2
4	3	3	1	0	2.2
4	3	2	2	0	2.2
4	3	2	1	1	2.2
3	3	3	2	0	2.2
3	3	3	1	1	2.2
3	3	2	2	1	2.2
4	4	2	0	0	2
4	4	1	1	0	2
4	3	3	0	0	2
4	3	2	1	0	2
4	3	1	1	1	2
3	3	3	1	0	2
3	3	2	2	0	2
3	3	2	1	1	2
4	4	1	0	0	1.8
4	3	2	0	0	1.8
4	3	1	1	0	1.8
3	3	3	0	0	1.8
3	3	2	1	0	1.8
3	3	1	1	1	1.8
4	4	0	0	0	1.6
4	3	1	0	0	1.6
3	3	2	0	0	1.6
3	3	1	1	0	1.6
4	3	0	0	0	1.4
3	3	1	0	0	1.4
3	3	0	0	0	1.2

Table 6 Combinations of population persistence categories for strata with six historical populations.

Pop 1	**Pop 2**	**Pop 3**	**Pop 4**	**Pop 5**	**Pop 6**	**Average**
4	4	4	4	4	4	4.00
4	4	4	4	4	3	3.83
4	4	4	4	4	2	3.67
4	4	4	4	3	3	3.67
4	4	4	4	4	1	3.50
4	4	4	4	3	2	3.50
4	4	4	3	3	3	3.50

4	4	4	4	4	0	3.33
4	4	4	4	3	1	3.33
4	4	4	4	2	2	3.33
4	4	4	3	3	2	3.33
4	4	3	3	3	3	3.33
4	4	4	4	3	0	3.17
4	4	4	4	2	1	3.17
4	4	4	3	3	1	3.17
4	4	4	3	2	2	3.17
4	4	3	3	3	2	3.17
4	3	3	3	3	3	3.17
4	4	4	4	2	0	3.00
4	4	4	4	1	1	3.00
4	4	4	3	3	0	3.00
4	4	4	3	2	1	3.00
4	4	4	2	2	2	3.00
4	4	3	3	3	1	3.00
4	4	3	3	2	2	3.00
4	3	3	3	3	2	3.00
3	3	3	3	3	3	3.00
4	4	4	4	1	0	2.83
4	4	4	3	2	0	2.83
4	4	4	3	1	1	2.83
4	4	4	2	2	1	2.83
4	4	3	3	3	0	2.83
4	4	3	3	2	1	2.83
4	4	3	2	2	2	2.83
4	3	3	3	3	1	2.83
4	3	3	3	2	2	2.83
3	3	3	3	3	2	2.83
4	4	4	4	0	0	2.67
4	4	4	3	1	0	2.67
4	4	4	2	2	0	2.67
4	4	4	2	1	1	2.67
4	4	3	3	2	0	2.67
4	4	3	3	1	1	2.67
4	4	3	2	2	1	2.67
4	4	2	2	2	2	2.67
4	3	3	3	3	0	2.67
4	3	3	3	2	1	2.67
4	3	3	2	2	2	2.67
3	3	3	3	3	1	2.67
3	3	3	3	2	2	2.67
4	4	4	3	0	0	2.50
4	4	4	2	1	0	2.50
4	4	4	1	1	1	2.50
4	4	3	3	1	0	2.50
4	4	3	2	2	0	2.50

4	4	3	2	1	1	2.50
4	4	2	2	2	1	2.50
4	3	3	3	2	0	2.50
4	3	3	3	1	1	2.50
4	3	3	2	2	1	2.50
4	3	2	2	2	2	2.50
3	3	3	3	3	0	2.50
3	3	3	3	2	1	2.50
3	3	3	2	2	2	2.50
4	4	4	2	0	0	2.33
4	4	4	1	1	0	2.33
4	4	3	3	0	0	2.33
4	4	3	2	1	0	2.33
4	4	3	1	1	1	2.33
4	4	2	2	2	0	2.33
4	4	2	2	1	1	2.33
4	3	3	3	1	0	2.33
4	3	3	2	2	0	2.33
4	3	3	2	1	1	2.33
4	3	2	2	2	1	2.33
3	3	3	3	2	0	2.33
3	3	3	3	1	1	2.33
3	3	3	2	2	1	2.33
3	3	2	2	2	2	2.33
4	4	4	1	0	0	2.17
4	4	3	2	0	0	2.17
4	4	3	1	1	0	2.17
4	4	2	2	1	0	2.17
4	4	2	1	1	1	2.17
4	3	3	3	0	0	2.17
4	3	3	2	1	0	2.17
4	3	3	1	1	1	2.17
4	3	2	2	2	0	2.17
4	3	2	2	1	1	2.17
3	3	3	3	1	0	2.17
3	3	3	2	2	0	2.17
3	3	3	2	1	1	2.17
3	3	2	2	2	1	2.17
4	4	4	0	0	0	2.00
4	4	3	1	0	0	2.00
4	4	2	2	0	0	2.00
4	4	2	1	1	0	2.00
4	4	1	1	1	1	2.00
4	3	3	2	0	0	2.00
4	3	3	1	1	0	2.00
4	3	2	2	1	0	2.00
4	3	2	1	1	1	2.00
3	3	3	3	0	0	2.00

3	3	3	2	1	0	2.00
3	3	3	1	1	1	2.00
3	3	2	2	2	0	2.00
3	3	2	2	1	1	2.00
4	4	3	0	0	0	1.83
4	4	2	1	0	0	1.83
4	4	1	1	1	0	1.83
4	3	3	1	0	0	1.83
4	3	2	2	0	0	1.83
4	3	2	1	1	0	1.83
4	3	1	1	1	1	1.83
3	3	3	2	0	0	1.83
3	3	3	1	1	0	1.83
3	3	2	2	1	0	1.83
3	3	2	1	1	1	1.83
4	4	2	0	0	0	1.67
4	4	1	1	0	0	1.67
4	3	3	0	0	0	1.67
4	3	2	1	0	0	1.67
4	3	1	1	1	0	1.67
3	3	3	1	0	0	1.67
3	3	2	2	0	0	1.67
3	3	2	1	1	0	1.67
3	3	1	1	1	1	1.67
4	4	1	0	0	0	1.50
4	3	2	0	0	0	1.50
4	3	1	1	0	0	1.50
3	3	3	0	0	0	1.50
3	3	2	1	0	0	1.50
3	3	1	1	1	0	1.50
4	4	0	0	0	0	1.33
4	3	1	0	0	0	1.33
3	3	2	0	0	0	1.33
3	3	1	1	0	0	1.33
4	3	0	0	0	0	1.17
3	3	1	0	0	0	1.17
3	3	0	0	0	0	1.00

Table 7 Combinations of population persistence categories for strata with seven historical populations.

Pop 1	Pop 2	Pop 3	Pop 4	Pop 5	Pop 6	Pop 7	Average
4	4	4	4	4	4	4	4.00
4	4	4	4	4	4	3	3.86
4	4	4	4	4	4	2	3.71
4	4	4	4	4	3	3	3.71
4	4	4	4	4	4	1	3.57

4	4	4	4	4	3	2	3.57
4	4	4	4	3	3	3	3.57
4	4	4	4	4	4	0	3.43
4	4	4	4	4	3	1	3.43
4	4	4	4	4	2	2	3.43
4	4	4	4	3	3	2	3.43
4	4	4	3	3	3	3	3.43
4	4	4	4	4	3	0	3.29
4	4	4	4	4	2	1	3.29
4	4	4	4	3	3	1	3.29
4	4	4	4	3	2	2	3.29
4	4	4	3	3	3	2	3.29
4	4	3	3	3	3	3	3.29
4	4	4	4	4	2	0	3.14
4	4	4	4	4	1	1	3.14
4	4	4	4	3	3	0	3.14
4	4	4	4	3	2	1	3.14
4	4	4	4	2	2	2	3.14
4	4	4	3	3	3	1	3.14
4	4	4	3	3	2	2	3.14
4	4	3	3	3	3	2	3.14
4	3	3	3	3	3	3	3.14
4	4	4	4	4	1	0	3.00
4	4	4	4	3	2	0	3.00
4	4	4	4	3	1	1	3.00
4	4	4	4	2	2	1	3.00
4	4	4	3	3	3	0	3.00
4	4	4	3	3	2	1	3.00
4	4	4	3	2	2	2	3.00
4	4	3	3	3	3	1	3.00
4	4	3	3	3	2	2	3.00
4	3	3	3	3	3	2	3.00
3	3	3	3	3	3	3	3.00
4	4	4	4	4	0	0	2.86
4	4	4	4	3	1	0	2.86
4	4	4	4	2	2	0	2.86
4	4	4	4	2	1	1	2.86
4	4	4	3	3	2	0	2.86
4	4	4	3	3	1	1	2.86
4	4	4	3	2	2	1	2.86
4	4	4	2	2	2	2	2.86
4	4	3	3	3	3	0	2.86
4	4	3	3	3	2	1	2.86
4	4	3	3	2	2	2	2.86
4	3	3	3	3	3	1	2.86
4	3	3	3	3	2	2	2.86
3	3	3	3	3	3	2	2.86
4	4	4	4	3	0	0	2.71

4	4	4	4	2	1	0	2.71
4	4	4	4	1	1	1	2.71
4	4	4	3	3	1	0	2.71
4	4	4	3	2	2	0	2.71
4	4	4	3	2	1	1	2.71
4	4	4	2	2	2	1	2.71
4	4	3	3	3	2	0	2.71
4	4	3	3	3	1	1	2.71
4	4	3	3	2	2	1	2.71
4	4	3	2	2	2	2	2.71
4	3	3	3	3	3	0	2.71
4	3	3	3	3	2	1	2.71
4	3	3	3	2	2	2	2.71
3	3	3	3	3	3	1	2.71
3	3	3	3	3	2	2	2.71
4	4	4	4	2	0	0	2.57
4	4	4	4	1	1	0	2.57
4	4	4	3	3	0	0	2.57
4	4	4	3	2	1	0	2.57
4	4	4	3	1	1	1	2.57
4	4	4	2	2	2	0	2.57
4	4	4	2	2	1	1	2.57
4	4	3	3	3	1	0	2.57
4	4	3	3	2	2	0	2.57
4	4	3	3	2	1	1	2.57
4	4	3	2	2	2	1	2.57
4	4	2	2	2	2	2	2.57
4	3	3	3	3	2	0	2.57
4	3	3	3	3	1	1	2.57
4	3	3	3	2	2	1	2.57
4	3	3	2	2	2	2	2.57
3	3	3	3	3	3	0	2.57
3	3	3	3	3	2	1	2.57
3	3	3	3	2	2	2	2.57
4	4	4	4	1	0	0	2.43
4	4	4	3	2	0	0	2.43
4	4	4	3	1	1	0	2.43
4	4	4	2	2	1	0	2.43
4	4	4	2	1	1	1	2.43
4	4	3	3	3	0	0	2.43
4	4	3	3	2	1	0	2.43
4	4	3	3	1	1	1	2.43
4	4	3	2	2	2	0	2.43
4	4	3	2	2	1	1	2.43
4	4	2	2	2	2	1	2.43
4	3	3	3	3	1	0	2.43
4	3	3	3	2	2	0	2.43
4	3	3	3	2	1	1	2.43

4	3	3	2	2	2	1	2.43
4	3	2	2	2	2	2	2.43
3	3	3	3	3	2	0	2.43
3	3	3	3	3	1	1	2.43
3	3	3	3	2	2	1	2.43
3	3	3	2	2	2	2	2.43
4	4	4	4	0	0	0	2.29
4	4	4	3	1	0	0	2.29
4	4	4	2	2	0	0	2.29
4	4	4	2	1	1	0	2.29
4	4	4	1	1	1	1	2.29
4	4	3	3	2	0	0	2.29
4	4	3	3	1	1	0	2.29
4	4	3	2	2	1	0	2.29
4	4	3	2	1	1	1	2.29
4	4	2	2	2	2	0	2.29
4	4	2	2	2	1	1	2.29
4	3	3	3	3	0	0	2.29
4	3	3	3	2	1	0	2.29
4	3	3	3	1	1	1	2.29
4	3	3	2	2	2	0	2.29
4	3	3	2	2	1	1	2.29
4	3	2	2	2	2	1	2.29
3	3	3	3	3	1	0	2.29
3	3	3	3	2	2	0	2.29
3	3	3	3	2	1	1	2.29
3	3	3	2	2	2	1	2.29
3	3	2	2	2	2	2	2.29
4	4	4	3	0	0	0	2.14
4	4	4	2	1	0	0	2.14
4	4	4	1	1	1	0	2.14
4	4	3	3	1	0	0	2.14
4	4	3	2	2	0	0	2.14
4	4	3	2	1	1	0	2.14
4	4	3	1	1	1	1	2.14
4	4	2	2	2	1	0	2.14
4	4	2	2	1	1	1	2.14
4	3	3	3	2	0	0	2.14
4	3	3	3	1	1	0	2.14
4	3	3	2	2	1	0	2.14
4	3	3	2	1	1	1	2.14
4	3	2	2	2	2	0	2.14
4	3	2	2	2	1	1	2.14
3	3	3	3	3	0	0	2.14
3	3	3	3	2	1	0	2.14
3	3	3	3	1	1	1	2.14
3	3	3	2	2	2	0	2.14
3	3	3	2	2	1	1	2.14

3	3	2	2	2	2	1	2.14
4	4	4	2	0	0	0	2.00
4	4	4	1	1	0	0	2.00
4	4	3	3	0	0	0	2.00
4	4	3	2	1	0	0	2.00
4	4	3	1	1	1	0	2.00
4	4	2	2	2	0	0	2.00
4	4	2	2	1	1	0	2.00
4	4	2	1	1	1	1	2.00
4	3	3	3	1	0	0	2.00
4	3	3	2	2	0	0	2.00
4	3	3	2	1	1	0	2.00
4	3	3	1	1	1	1	2.00
4	3	2	2	2	1	0	2.00
4	3	2	2	1	1	1	2.00
3	3	3	3	2	0	0	2.00
3	3	3	3	1	1	0	2.00
3	3	3	2	2	1	0	2.00
3	3	3	2	1	1	1	2.00
3	3	2	2	2	2	0	2.00
3	3	2	2	2	1	1	2.00
4	4	4	1	0	0	0	1.86
4	4	3	2	0	0	0	1.86
4	4	3	1	1	0	0	1.86
4	4	2	2	1	0	0	1.86
4	4	2	1	1	1	0	1.86
4	4	1	1	1	1	1	1.86
4	3	3	3	0	0	0	1.86
4	3	3	2	1	0	0	1.86
4	3	3	1	1	1	0	1.86
4	3	2	2	2	0	0	1.86
4	3	2	2	1	1	0	1.86
4	3	2	1	1	1	1	1.86
3	3	3	3	1	0	0	1.86
3	3	3	2	2	0	0	1.86
3	3	3	2	1	1	0	1.86
3	3	3	1	1	1	1	1.86
3	3	2	2	2	1	0	1.86
3	3	2	2	1	1	1	1.86
4	4	4	0	0	0	0	1.71
4	4	3	1	0	0	0	1.71
4	4	2	2	0	0	0	1.71
4	4	2	1	1	0	0	1.71
4	4	1	1	1	1	0	1.71
4	3	3	2	0	0	0	1.71
4	3	3	1	1	0	0	1.71
4	3	2	2	1	0	0	1.71
4	3	2	1	1	1	0	1.71

4	3	1	1	1	1	1	1.71
3	3	3	3	0	0	0	1.71
3	3	3	2	1	0	0	1.71
3	3	3	1	1	1	0	1.71
3	3	2	2	2	0	0	1.71
3	3	2	2	1	1	0	1.71
3	3	2	1	1	1	1	1.71
4	4	3	0	0	0	0	1.57
4	4	2	1	0	0	0	1.57
4	4	1	1	1	0	0	1.57
4	3	3	1	0	0	0	1.57
4	3	2	2	0	0	0	1.57
4	3	2	1	1	0	0	1.57
4	3	1	1	1	1	0	1.57
3	3	3	2	0	0	0	1.57
3	3	3	1	1	0	0	1.57
3	3	2	2	1	0	0	1.57
3	3	2	1	1	1	0	1.57
3	3	1	1	1	1	1	1.57
4	4	2	0	0	0	0	1.43
4	4	1	1	0	0	0	1.43
4	3	3	0	0	0	0	1.43
4	3	2	1	0	0	0	1.43
4	3	1	1	1	0	0	1.43
3	3	3	1	0	0	0	1.43
3	3	2	2	0	0	0	1.43
3	3	2	1	1	0	0	1.43
3	3	1	1	1	1	0	1.43
4	4	1	0	0	0	0	1.29
4	3	2	0	0	0	0	1.29
4	3	1	1	0	0	0	1.29
3	3	3	0	0	0	0	1.29
3	3	2	1	0	0	0	1.29
3	3	1	1	1	0	0	1.29
4	4	0	0	0	0	0	1.14
4	3	1	0	0	0	0	1.14
3	3	2	0	0	0	0	1.14
3	3	1	1	0	0	0	1.14
4	3	0	0	0	0	0	1.00
3	3	1	0	0	0	0	1.00
3	3	0	0	0	0	0	0.86

Table 8 Combinations of population persistence categories for strata with eight historical populations.

Pop 1	**Pop 2**	**Pop 3**	**Pop 4**	**Pop 5**	**Pop 6**	**Pop 7**	**Pop 8**	**Average**
4	4	4	4	4	4	4	4	4.00

4	4	4	4	4	4	4	3	3.88
4	4	4	4	4	4	4	2	3.75
4	4	4	4	4	4	3	3	3.75
4	4	4	4	4	4	4	1	3.63
4	4	4	4	4	4	3	2	3.63
4	4	4	4	4	3	3	3	3.63
4	4	4	4	4	4	4	0	3.50
4	4	4	4	4	4	3	1	3.50
4	4	4	4	4	4	2	2	3.50
4	4	4	4	4	3	3	2	3.50
4	4	4	4	3	3	3	3	3.50
4	4	4	4	4	4	3	0	3.38
4	4	4	4	4	4	2	1	3.38
4	4	4	4	4	3	3	1	3.38
4	4	4	4	4	3	2	2	3.38
4	4	4	4	3	3	3	2	3.38
4	4	4	3	3	3	3	3	3.38
4	4	4	4	4	4	2	0	3.25
4	4	4	4	4	4	1	1	3.25
4	4	4	4	4	3	3	0	3.25
4	4	4	4	4	3	2	1	3.25
4	4	4	4	4	2	2	2	3.25
4	4	4	4	3	3	3	1	3.25
4	4	4	4	3	3	2	2	3.25
4	4	4	3	3	3	3	2	3.25
4	4	3	3	3	3	3	3	3.25
4	4	4	4	4	4	1	0	3.13
4	4	4	4	4	3	2	0	3.13
4	4	4	4	4	3	1	1	3.13
4	4	4	4	4	2	2	1	3.13
4	4	4	4	3	3	3	0	3.13
4	4	4	4	3	3	2	1	3.13
4	4	4	4	3	2	2	2	3.13
4	4	4	3	3	3	3	1	3.13
4	4	4	3	3	3	2	2	3.13
4	4	3	3	3	3	3	2	3.13
4	3	3	3	3	3	3	3	3.13
4	4	4	4	4	4	0	0	3.00
4	4	4	4	4	3	1	0	3.00
4	4	4	4	4	2	2	0	3.00
4	4	4	4	4	2	1	1	3.00
4	4	4	4	3	3	2	0	3.00
4	4	4	4	3	3	1	1	3.00
4	4	4	4	3	2	2	1	3.00
4	4	4	4	2	2	2	2	3.00
4	4	4	3	3	3	3	0	3.00
4	4	4	3	3	3	2	1	3.00
4	4	4	3	3	2	2	2	3.00

4	4	3	3	3	3	3	1	3.00
4	4	3	3	3	3	2	2	3.00
4	3	3	3	3	3	3	2	3.00
3	3	3	3	3	3	3	3	3.00
4	4	4	4	4	3	0	0	2.88
4	4	4	4	4	2	1	0	2.88
4	4	4	4	4	1	1	1	2.88
4	4	4	4	3	3	1	0	2.88
4	4	4	4	3	2	2	0	2.88
4	4	4	4	3	2	1	1	2.88
4	4	4	4	2	2	2	1	2.88
4	4	4	3	3	3	2	0	2.88
4	4	4	3	3	3	1	1	2.88
4	4	4	3	3	2	2	1	2.88
4	4	4	3	2	2	2	2	2.88
4	4	3	3	3	3	3	0	2.88
4	4	3	3	3	3	2	1	2.88
4	4	3	3	3	2	2	2	2.88
4	3	3	3	3	3	3	1	2.88
4	3	3	3	3	3	2	2	2.88
3	3	3	3	3	3	3	2	2.88
4	4	4	4	4	2	0	0	2.75
4	4	4	4	4	1	1	0	2.75
4	4	4	4	3	3	0	0	2.75
4	4	4	4	3	2	1	0	2.75
4	4	4	4	3	1	1	1	2.75
4	4	4	4	2	2	2	0	2.75
4	4	4	4	2	2	1	1	2.75
4	4	4	3	3	3	1	0	2.75
4	4	4	3	3	2	2	0	2.75
4	4	4	3	3	2	1	1	2.75
4	4	4	3	2	2	2	1	2.75
4	4	4	2	2	2	2	2	2.75
4	4	3	3	3	3	2	0	2.75
4	4	3	3	3	3	1	1	2.75
4	4	3	3	3	2	2	1	2.75
4	4	3	3	2	2	2	2	2.75
4	3	3	3	3	3	3	0	2.75
4	3	3	3	3	3	2	1	2.75
4	3	3	3	3	2	2	2	2.75
3	3	3	3	3	3	3	1	2.75
3	3	3	3	3	3	2	2	2.75
4	4	4	4	4	1	0	0	2.63
4	4	4	4	3	2	0	0	2.63
4	4	4	4	3	1	1	0	2.63
4	4	4	4	2	2	1	0	2.63
4	4	4	4	2	1	1	1	2.63
4	4	4	3	3	3	0	0	2.63

4	4	4	3	3	2	1	0	2.63
4	4	4	3	3	1	1	1	2.63
4	4	4	3	2	2	2	0	2.63
4	4	4	3	2	2	1	1	2.63
4	4	4	2	2	2	2	1	2.63
4	4	3	3	3	3	1	0	2.63
4	4	3	3	3	2	2	0	2.63
4	4	3	3	3	2	1	1	2.63
4	4	3	3	2	2	2	1	2.63
4	4	3	2	2	2	2	2	2.63
4	3	3	3	3	3	2	0	2.63
4	3	3	3	3	3	1	1	2.63
4	3	3	3	3	2	2	1	2.63
4	3	3	3	2	2	2	2	2.63
3	3	3	3	3	3	3	0	2.63
3	3	3	3	3	3	2	1	2.63
3	3	3	3	3	2	2	2	2.63
4	4	4	4	4	0	0	0	2.50
4	4	4	4	3	1	0	0	2.50
4	4	4	4	2	2	0	0	2.50
4	4	4	4	2	1	1	0	2.50
4	4	4	4	1	1	1	1	2.50
4	4	4	3	3	2	0	0	2.50
4	4	4	3	3	1	1	0	2.50
4	4	4	3	2	2	1	0	2.50
4	4	4	3	2	1	1	1	2.50
4	4	4	2	2	2	2	0	2.50
4	4	4	2	2	2	1	1	2.50
4	4	3	3	3	3	0	0	2.50
4	4	3	3	3	2	1	0	2.50
4	4	3	3	3	1	1	1	2.50
4	4	3	3	2	2	2	0	2.50
4	4	3	3	2	2	1	1	2.50
4	4	3	2	2	2	2	1	2.50
4	4	2	2	2	2	2	2	2.50
4	3	3	3	3	3	1	0	2.50
4	3	3	3	3	2	2	0	2.50
4	3	3	3	3	2	1	1	2.50
4	3	3	3	2	2	2	1	2.50
4	3	3	2	2	2	2	2	2.50
3	3	3	3	3	3	2	0	2.50
3	3	3	3	3	3	1	1	2.50
3	3	3	3	3	2	2	1	2.50
3	3	3	3	2	2	2	2	2.50
4	4	4	4	3	0	0	0	2.38
4	4	4	4	2	1	0	0	2.38
4	4	4	4	1	1	1	0	2.38
4	4	4	3	3	1	0	0	2.38

4	4	4	3	2	2	0	0	2.38
4	4	4	3	2	1	1	0	2.38
4	4	4	3	1	1	1	1	2.38
4	4	4	2	2	2	1	0	2.38
4	4	4	2	2	1	1	1	2.38
4	4	3	3	3	2	0	0	2.38
4	4	3	3	3	1	1	0	2.38
4	4	3	3	2	2	1	0	2.38
4	4	3	3	2	1	1	1	2.38
4	4	3	2	2	2	2	0	2.38
4	4	3	2	2	2	1	1	2.38
4	4	2	2	2	2	2	1	2.38
4	3	3	3	3	3	0	0	2.38
4	3	3	3	3	2	1	0	2.38
4	3	3	3	3	1	1	1	2.38
4	3	3	3	2	2	2	0	2.38
4	3	3	3	2	2	1	1	2.38
4	3	3	2	2	2	2	1	2.38
4	3	2	2	2	2	2	2	2.38
3	3	3	3	3	3	1	0	2.38
3	3	3	3	3	2	2	0	2.38
3	3	3	3	3	2	1	1	2.38
3	3	3	3	2	2	2	1	2.38
3	3	3	2	2	2	2	2	2.38
4	4	4	4	2	0	0	0	2.25
4	4	4	4	1	1	0	0	2.25
4	4	4	3	3	0	0	0	2.25
4	4	4	3	2	1	0	0	2.25
4	4	4	3	1	1	1	0	2.25
4	4	4	2	2	2	0	0	2.25
4	4	4	2	2	1	1	0	2.25
4	4	4	2	1	1	1	1	2.25
4	4	3	3	3	1	0	0	2.25
4	4	3	3	2	2	0	0	2.25
4	4	3	3	2	1	1	0	2.25
4	4	3	3	1	1	1	1	2.25
4	4	3	2	2	2	1	0	2.25
4	4	3	2	2	1	1	1	2.25
4	4	2	2	2	2	2	0	2.25
4	4	2	2	2	2	1	1	2.25
4	3	3	3	3	2	0	0	2.25
4	3	3	3	3	1	1	0	2.25
4	3	3	3	2	2	1	0	2.25
4	3	3	3	2	1	1	1	2.25
4	3	3	2	2	2	2	0	2.25
4	3	3	2	2	2	1	1	2.25
4	3	2	2	2	2	2	1	2.25
3	3	3	3	3	3	0	0	2.25

3	3	3	3	3	2	1	0	2.25
3	3	3	3	3	1	1	1	2.25
3	3	3	3	2	2	2	0	2.25
3	3	3	3	2	2	1	1	2.25
3	3	3	2	2	2	2	1	2.25
3	3	2	2	2	2	2	2	2.25
4	4	4	4	1	0	0	0	2.13
4	4	4	3	2	0	0	0	2.13
4	4	4	3	1	1	0	0	2.13
4	4	4	2	2	1	0	0	2.13
4	4	4	2	1	1	1	0	2.13
4	4	4	1	1	1	1	1	2.13
4	4	3	3	3	0	0	0	2.13
4	4	3	3	2	1	0	0	2.13
4	4	3	3	1	1	1	0	2.13
4	4	3	2	2	2	0	0	2.13
4	4	3	2	2	1	1	0	2.13
4	4	3	2	1	1	1	1	2.13
4	4	2	2	2	2	1	0	2.13
4	4	2	2	2	1	1	1	2.13
4	3	3	3	3	1	0	0	2.13
4	3	3	3	2	2	0	0	2.13
4	3	3	3	2	1	1	0	2.13
4	3	3	3	1	1	1	1	2.13
4	3	3	2	2	2	1	0	2.13
4	3	3	2	2	1	1	1	2.13
4	3	2	2	2	2	2	0	2.13
4	3	2	2	2	2	1	1	2.13
3	3	3	3	3	2	0	0	2.13
3	3	3	3	3	1	1	0	2.13
3	3	3	3	2	2	1	0	2.13
3	3	3	3	2	1	1	1	2.13
3	3	3	2	2	2	2	0	2.13
3	3	3	2	2	2	1	1	2.13
3	3	2	2	2	2	2	1	2.13
4	4	4	4	0	0	0	0	2.00
4	4	4	3	1	0	0	0	2.00
4	4	4	2	2	0	0	0	2.00
4	4	4	2	1	1	0	0	2.00
4	4	4	1	1	1	1	0	2.00
4	4	3	3	2	0	0	0	2.00
4	4	3	3	1	1	0	0	2.00
4	4	3	2	2	1	0	0	2.00
4	4	3	2	1	1	1	0	2.00
4	4	3	1	1	1	1	1	2.00
4	4	2	2	2	2	0	0	2.00
4	4	2	2	2	1	1	0	2.00
4	4	2	2	1	1	1	1	2.00

4	3	3	3	3	0	0	0	2.00
4	3	3	3	2	1	0	0	2.00
4	3	3	3	1	1	1	0	2.00
4	3	3	2	2	2	0	0	2.00
4	3	3	2	2	1	1	0	2.00
4	3	3	2	1	1	1	1	2.00
4	3	2	2	2	2	1	0	2.00
4	3	2	2	2	1	1	1	2.00
3	3	3	3	3	1	0	0	2.00
3	3	3	3	2	2	0	0	2.00
3	3	3	3	2	1	1	0	2.00
3	3	3	3	1	1	1	1	2.00
3	3	3	2	2	2	1	0	2.00
3	3	3	2	2	1	1	1	2.00
3	3	2	2	2	2	2	0	2.00
3	3	2	2	2	2	1	1	2.00
4	4	4	3	0	0	0	0	1.88
4	4	4	2	1	0	0	0	1.88
4	4	4	1	1	1	0	0	1.88
4	4	3	3	1	0	0	0	1.88
4	4	3	2	2	0	0	0	1.88
4	4	3	2	1	1	0	0	1.88
4	4	3	1	1	1	1	0	1.88
4	4	2	2	2	1	0	0	1.88
4	4	2	2	1	1	1	0	1.88
4	4	2	1	1	1	1	1	1.88
4	3	3	3	2	0	0	0	1.88
4	3	3	3	1	1	0	0	1.88
4	3	3	2	2	1	0	0	1.88
4	3	3	2	1	1	1	0	1.88
4	3	3	1	1	1	1	1	1.88
4	3	2	2	2	2	0	0	1.88
4	3	2	2	2	1	1	0	1.88
4	3	2	2	1	1	1	1	1.88
3	3	3	3	3	0	0	0	1.88
3	3	3	3	2	1	0	0	1.88
3	3	3	3	1	1	1	0	1.88
3	3	3	2	2	2	0	0	1.88
3	3	3	2	2	1	1	0	1.88
3	3	3	2	1	1	1	1	1.88
3	3	2	2	2	2	1	0	1.88
3	3	2	2	2	1	1	1	1.88
4	4	4	2	0	0	0	0	1.75
4	4	4	1	1	0	0	0	1.75
4	4	3	3	0	0	0	0	1.75
4	4	3	2	1	0	0	0	1.75
4	4	3	1	1	1	0	0	1.75
4	4	2	2	2	0	0	0	1.75
4	4	2	2	1	1	0	0	1.75
4	4	2	1	1	1	1	0	1.75

4	4	1	1	1	1	1	1	1.75
4	3	3	3	1	0	0	0	1.75
4	3	3	2	2	0	0	0	1.75
4	3	3	2	1	1	0	0	1.75
4	3	3	1	1	1	1	0	1.75
4	3	2	2	2	1	0	0	1.75
4	3	2	2	1	1	1	0	1.75
4	3	2	1	1	1	1	1	1.75
3	3	3	3	2	0	0	0	1.75
3	3	3	3	1	1	0	0	1.75
3	3	3	2	2	1	0	0	1.75
3	3	3	2	1	1	1	0	1.75
3	3	3	1	1	1	1	1	1.75
3	3	2	2	2	2	0	0	1.75
3	3	2	2	2	1	1	0	1.75
3	3	2	2	1	1	1	1	1.75
4	4	4	1	0	0	0	0	1.63
4	4	3	2	0	0	0	0	1.63
4	4	3	1	1	0	0	0	1.63
4	4	2	2	1	0	0	0	1.63
4	4	2	1	1	1	0	0	1.63
4	4	1	1	1	1	1	0	1.63
4	3	3	3	0	0	0	0	1.63
4	3	3	2	1	0	0	0	1.63
4	3	3	1	1	1	0	0	1.63
4	3	2	2	2	0	0	0	1.63
4	3	2	2	1	1	0	0	1.63
4	3	2	1	1	1	1	0	1.63
4	3	1	1	1	1	1	1	1.63
3	3	3	3	1	0	0	0	1.63
3	3	3	2	2	0	0	0	1.63
3	3	3	2	1	1	0	0	1.63
3	3	3	1	1	1	1	0	1.63
3	3	2	2	2	1	0	0	1.63
3	3	2	2	1	1	1	0	1.63
3	3	2	1	1	1	1	1	1.63
4	4	4	0	0	0	0	0	1.50
4	4	3	1	0	0	0	0	1.50
4	4	2	2	0	0	0	0	1.50
4	4	2	1	1	0	0	0	1.50
4	4	1	1	1	1	0	0	1.50
4	3	3	2	0	0	0	0	1.50
4	3	3	1	1	0	0	0	1.50
4	3	2	2	1	0	0	0	1.50
4	3	2	1	1	1	0	0	1.50
4	3	1	1	1	1	1	0	1.50
3	3	3	3	0	0	0	0	1.50
3	3	3	2	1	0	0	0	1.50
3	3	3	1	1	1	0	0	1.50
3	3	2	2	2	0	0	0	1.50

3	3	2	2	1	1	0	0	1.50
3	3	2	1	1	1	1	0	1.50
3	3	1	1	1	1	1	1	1.50
4	4	3	0	0	0	0	0	1.38
4	4	2	1	0	0	0	0	1.38
4	4	1	1	1	0	0	0	1.38
4	3	3	1	0	0	0	0	1.38
4	3	2	2	0	0	0	0	1.38
4	3	2	1	1	0	0	0	1.38
4	3	1	1	1	1	0	0	1.38
3	3	3	2	0	0	0	0	1.38
3	3	3	1	1	0	0	0	1.38
3	3	2	2	1	0	0	0	1.38
3	3	2	1	1	1	0	0	1.38
3	3	1	1	1	1	1	0	1.38
4	4	2	0	0	0	0	0	1.25
4	4	1	1	0	0	0	0	1.25
4	3	3	0	0	0	0	0	1.25
4	3	2	1	0	0	0	0	1.25
4	3	1	1	1	0	0	0	1.25
3	3	3	1	0	0	0	0	1.25
3	3	2	2	0	0	0	0	1.25
3	3	2	1	1	0	0	0	1.25
3	3	1	1	1	1	0	0	1.25
4	4	1	0	0	0	0	0	1.13
4	3	2	0	0	0	0	0	1.13
4	3	1	1	0	0	0	0	1.13
3	3	3	0	0	0	0	0	1.13
3	3	2	1	0	0	0	0	1.13
3	3	1	1	1	0	0	0	1.13
4	4	0	0	0	0	0	0	1.00
4	3	1	0	0	0	0	0	1.00
3	3	2	0	0	0	0	0	1.00
3	3	1	1	0	0	0	0	1.00
4	3	0	0	0	0	0	0	0.88
3	3	1	0	0	0	0	0	0.88
3	3	0	0	0	0	0	0	0.75