**Problem Solving Final Project**

Pierre Wilfred Titcheu Yamdjeu

Vincent Danso Aboagye

**Part I**

**Exercise 1**

Q1) Here is a linear program to maximize the profit of the automotive manufacturer before maintenance:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Machine line | Assembly line | Price (to be maximized) |
| Non-electric | 2 | 1 | 60 |
| Electric | 1 | 2 | 111 |
| Constraint | 104 | 60 |  |

Objective function:

maximize 60x + 111y

Variables:

x = number of non-electric brake systems produced

y = number of electric brake systems produced

Constraints:

2x + y <= 104 (machining time constraint)

x + 2y <= 76 (assembly time constraint)

X>=0, y>=0

This linear program states that the objective is to maximize the profit by producing a certain number of non-electric and electric brake systems, subject to the constraints that the machining time and assembly time do not exceed the available time before maintenance.

**Exercise 2**

**Q1**

Here is a linear integer program to minimize the makespan on M=2 machines:

Objective function:

minimize max(C1, C2)

Variables:

x11, x12, ..., x1n, x21, x22, ..., x2n = binary variables indicating whether job j is assigned to machine 1 (x1j = 1) or machine 2 (x2j = 1)

C1 = load of machine 1

C2 = load of machine 2

Constraints:

Σj xij = 1 (each job must be assigned to exactly one machine)

C1 >= Σj tj \* x1j (load of machine 1 is the sum of processing times of jobs assigned to it)

C2 >= Σj tj \* x2j (load of machine 2 is the sum of processing times of jobs assigned to it)

**Q2**

Here is a formulation of the abstract problem with M machines:

Objective function:

minimize max(C1, C2, ..., CM)

Variables:

x11, x12, ..., x1n, x21, x22, ..., x2n, ..., xM1, xM2, ..., xMn = binary variables indicating whether job j is assigned to machine i (xij = 1)

CM = load of machine M

Constraints:

Σ xij = 1 (each job must be assigned to exactly one machine)

Σj tj \* xMj ≤ CM (load of machine M is the sum of processing times of jobs assigned to it)

**Exercise 3**

Here is a linear program to maximize the available money at the end of the 7th year:

Maximize:

105x11 + 112x12 + 119x13 + 105x21 + 112x22 + 119x23 + 105x31 + 112x32 + 119x33 + 105x41 + 112x42 + 119x43 + 105x51 + 112x52 + 119x53 + 105x61 + 112x62 + 119x63 + 105x71 + 112x72 + 119x73

Subject to:

x11 + x12 + x13 + x21 + x22 + x23 + x31 + x32 + x33 + x41 + x42 + x43 + x51 + x52 + x53 + x61 + x62 + x63 + x71 + x72 + x73 = 1000 (budget constraint)

x21 + x22 + x23 + x31 + x32 + x33 + x41 + x42 + x43 + x51 + x52 + x53 + x61 + x62 + x63 + x71 + x72 + x73 >= x11 (continuity constraint)

x31 + x32 + x33 + x41 + x42 + x43 + x51 + x52 + x53 + x61 + x62 + x63 + x71 + x72 + x73 >= x21 + x22 + x23 (continuity constraint)

x41 + x42 + x43 + x51 + x52 + x53 + x61 + x62 + x63 + x71 + x72 + x73 >= x31 + x32 + x33 (continuity constraint)

x51 + x52 + x53 + x61 + x62 + x63 + x71 + x72 + x73 >= x41 + x42 + x43 (continuity constraint)

x61 + x62 + x63 + x71 + x72 + x73 >= x51 + x52 + x53 (continuity constraint)

x71 + x72 + x73 >= x61 + x62 + x63 (continuity constraint)

x11, x12, x13, x21, x22, x23, x31, x32, x33, x41, x42, x43, x51, x52, x53, x61, x62, x63, x71, x72, x73 >= 0 (non-negativity constraint)

In this linear program, the objective is to maximize the total available money at the end of the 7th year. The budget constraint ensures that the total amount invested in all the plans over the 7 year period does not exceed 1000 euros. The continuity constraints ensure that the amount invested in each plan at a given year is greater than or equal to the amount invested in the previous year. The non-negativity constraints ensure that the amount invested in each plan is non-negative.

**Exercise 4**

**Q1)**

The total number of hours available for the butcher is 36 hours. Let's say that the butcher will produce x meat loaves of the first kind and y meat loaves of the second kind.

The total amount of meat used should not exceed the 120 kg of fresh meat that the butcher has. Therefore, the following constraint applies:

3x + 2y ≤ 120

The total number of hours used should not exceed the 36 hours available. Therefore, the following constraint applies:

9x + 8y ≤ 36

The objective is to maximize the revenue, which is equal to 15x + 9y.

Therefore, the mathematical model for this problem is as follows:

Maximize: 15x + 9y

Subject to:

3x + 2y ≤ 120

9x + 8y ≤ 36

x, y ≥ 0 (since the number of meat loaves produced cannot be negative)

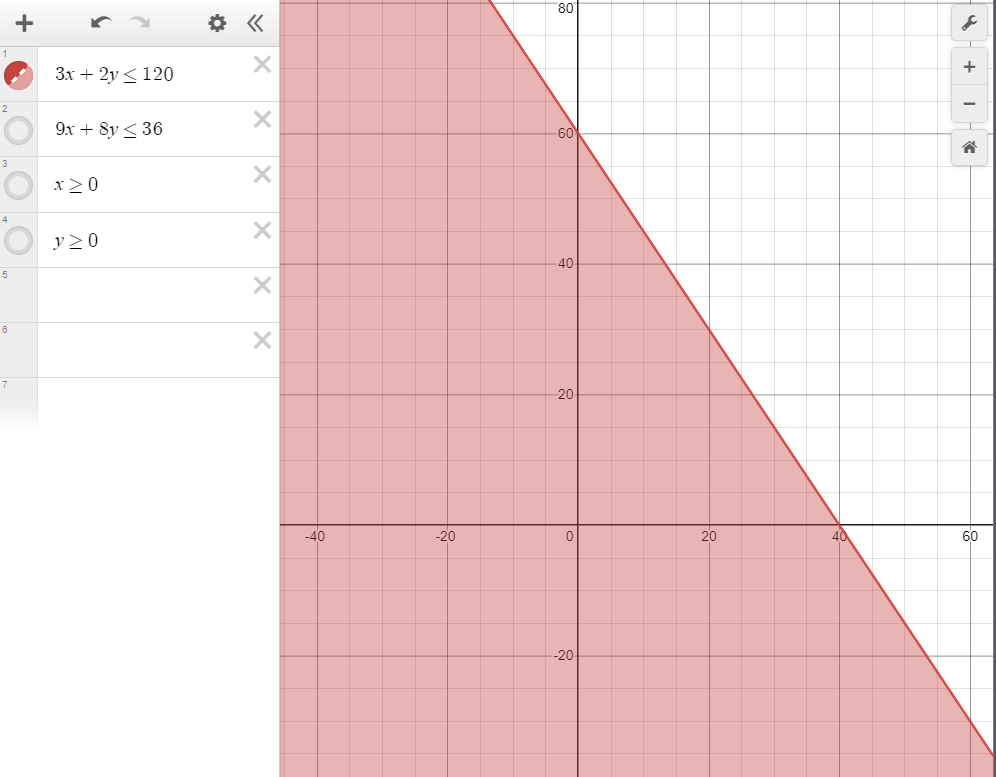
To solve this problem graphically, we can plot the constraints and find the values of x and y that maximize the objective function while satisfying the constraints.

To do this, we can begin by graphing the first constraint: 3x + 2y ≤ 120. We can do this by setting y = 0 and solving for x, and setting x = 0 and solving for y.

When y = 0, 3x ≤ 120, or x ≤ 40.

When x = 0, 2y ≤ 120, or y ≤ 60.

Therefore, the possible values of x and y that satisfy this constraint are all the points below the line 3x + 2y = 120, as shown in the graph below:

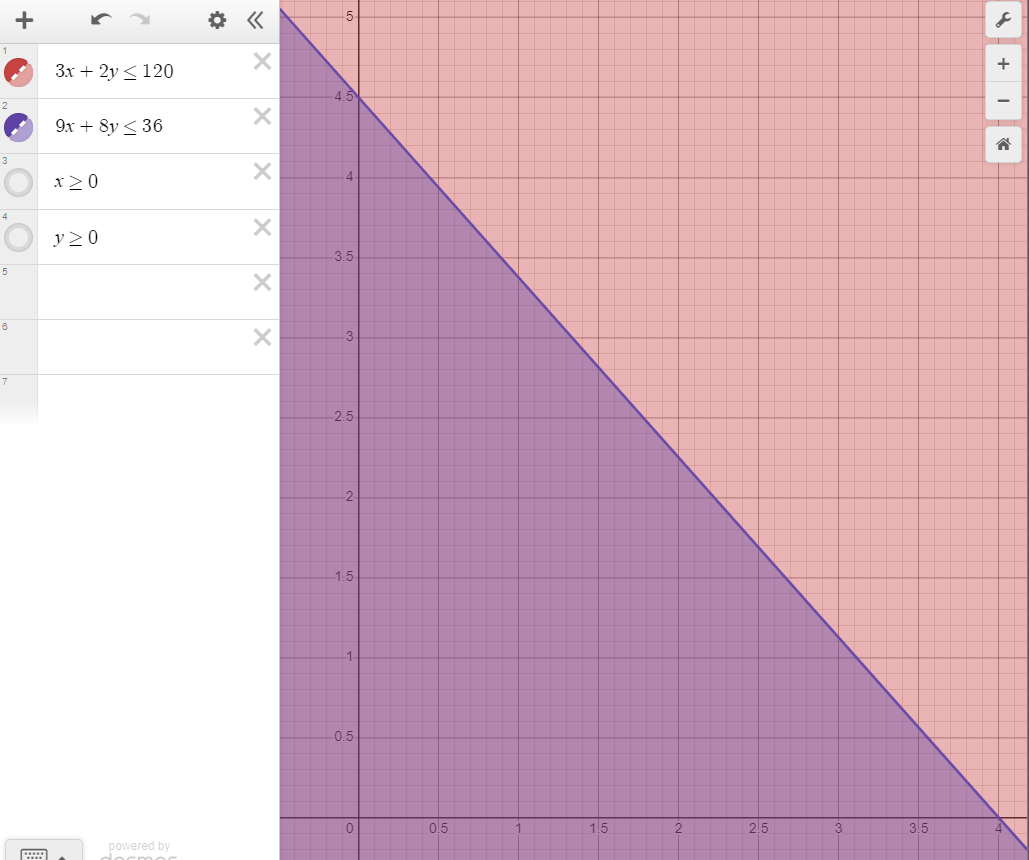
****

Next, we can graph the second constraint: 9x + 8y ≤ 36. We can do this by setting y = 0 and solving for x, and setting x = 0 and solving for y.

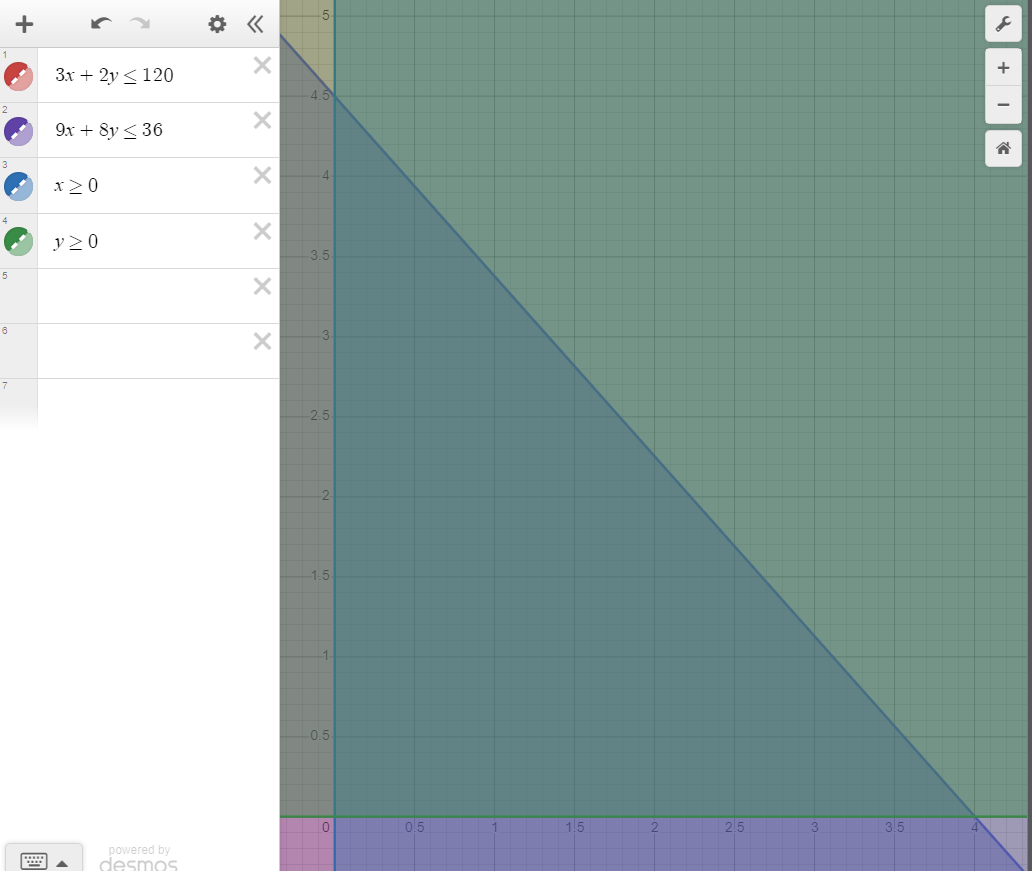
When y = 0, 9x ≤ 36, or x ≤ 4.

When x = 0, 8y ≤ 36, or y ≤ 4.5.

Therefore, the possible values of x and y that satisfy this constraint are all the points below the line 9x + 8y = 36, as shown in the graph below:



The feasible region, or the region where both constraints are satisfied, is the area where both graphs overlap. This region is shown in the graph below:



The optimal solution to this problem is the point in the feasible region that maximizes the objective function, which is 15x + 9y.

The point where this line is highest within the feasible region is the point (4, 0), which is the optimal solution.

This means that the butcher should produce 4 meat loaves of the first kind and 0 meat loaves of the second kind in order to maximize his revenue before Christmas.

**Exercise 5**

To prove that the Shortest Processing Time (SPT) rule is optimal, we will use a proof by contradiction. This means we will assume that there exists another scheduling that results in a smaller sum of completion times, and then show that this assumption leads to a contradiction.

Let's say that the SPT rule schedules the jobs in the order: J1, J2, J3, ..., Jn.

We will assume that there exists another scheduling, S, that results in a smaller sum of completion times. This means that the sum of completion times for the scheduling S is smaller than the sum of completion times for the SPT scheduling.

We can express this assumption as follows:

ΣCi(S) < ΣCi(SPT)

Where Ci(S) is the completion time of job i in the scheduling S, and Ci(SPT) is the completion time of job i in the SPT scheduling.

Since the sum of completion times for the scheduling S is smaller than the sum of completion times for the SPT scheduling, there must be at least one job, Jk, for which the completion time in the scheduling S is smaller than the completion time in the SPT scheduling.

This means that Ci(S) < Ci(SPT) for at least one job, Jk.

We can express this as follows:

Ci(S) = Σti(S) < Σti(SPT) = Ci(SPT)

Where ti(S) is the processing time of job i in the scheduling S, and ti(SPT) is the processing time of job i in the SPT scheduling.

Since the processing time of job Jk is smaller in the scheduling S than in the SPT scheduling, this means that Jk must be scheduled before Jk in the scheduling S.

However, since the SPT rule schedules the jobs in the order of increasing processing times, this means that Jk must be scheduled before Jk in the SPT scheduling as well.

This means that the scheduling S and the SPT scheduling are the same for the first k jobs.

We can express this as follows:

S1 = SPT1

Where S1 is the first k jobs in the scheduling S, and SPT1 is the first k jobs in the SPT scheduling.

Since the sum of completion times for the scheduling S is smaller than the sum of completion times for the SPT scheduling, and the first k jobs are the same in both schedulings, this means that the sum of completion times for the remaining (n-k) jobs must be smaller in the scheduling S than in the SPT scheduling.

We can express this as follows:

ΣCi(S) < ΣCi(SPT)

ΣCi(S) - ΣCi(SPT1) < ΣCi(SPT) - ΣCi(SPT1)

ΣCi(S2) < ΣCi(SPT2)

Where S2 is the remaining (n-k) jobs in the scheduling S, and SPT2 is the remaining (n-k) jobs in the SPT scheduling.

Since the sum of completion times for the remaining (n-k) jobs is smaller in the scheduling S than in the SPT scheduling, and the SPT rule schedules the jobs in the order of increasing processing times, this means that the scheduling S must also follow the SPT rule for the remaining (n-k) jobs

**Exercise 6**

To linearize the non-linear mathematical model provided, we can replace the objective with a linear function and add constraints to ensure that the maximum error of approximation is minimized.

One way to do this is to replace the objective with the sum of the absolute values of the errors of approximation. This will ensure that all errors of approximation are minimized, rather than just the largest error.

The linearized version of the model can be written as follows:

Minimize: Σ|y - axi - bi|

Subject to:

a ∈ R

b ∈ R

Alternatively, we can linearize the model by replacing the objective with the largest error of approximation and adding constraints to ensure that all other errors of approximation are minimized.

To do this, we can introduce a new variable, e, to represent the largest error of approximation. We can then add constraints to ensure that all other errors of approximation are smaller than or equal to e.

The linearized version of the model can be written as follows:

Minimize: e

Subject to:

|y - axi - bi| ≤ e ∀ i ∈ {1,...,m}

a ∈ R

b ∈ R

e ∈ R

**Part II**

**Exercise 7**

**Q1:** The decision variables in the N-queens problem are the positions of the queens on the chessboard. We can represent each queen's position using a pair of variables (i, j), where i is the row number and j is the column number.

**Q2:** The constraints in the N-queens problem include:

Each cell on the chessboard can only contain one queen.

No two queens can be on the same row.

No two queens can be on the same column.

No two queens can be on the same diagonal.

**Q3:** The objective function in the N-queens problem is to find a valid placement of queens on the chessboard that satisfies the constraints. There is no specific optimization criterion, such as minimizing or maximizing a particular value.

**Q4:** An abstract model or generalization of the N-queens problem to an arbitrary number of queens (N) can be expressed as follows:

Given an N x N chessboard, find a valid placement of N queens on the chessboard such that no two queens attack each other (i.e., no two queens are on the same row, column, or diagonal).

This abstract model can be used to solve the N-queens problem for any value of N. To do this, we can define the decision variables (i, j) for each queen, specify the constraints that must be satisfied, and use an appropriate algorithm to find a valid placement of queens on the chessboard.

**Exercise 8**

**Questions**

**Q1:**

ddef selection(self, individuals, k, tournsize=2):

#

# Exercise 2. a)

#

# Return a list of selected candidates

#

#Select the best individuals among the population.

chosen = []

for \_ in range(k):

# Select candidates by tournament

rest = random.sample(individuals, tournsize)

# Select the fittest candidate

min\_fitness = min([element.fitness for element in rest])

selected\_individuals = [

element for element in rest if element.fitness == min\_fitness]

selected = selected\_individuals

if len(selected\_individuals) > 1:

selected = random.sample(selected\_individuals, 1)

# Append the fittest candidate to the list of chosen individuals

chosen.append(selected[0])

# Return the list of tournament winners

return chosen

**Q2:**

def crossover(self, ind1, ind2):

# Exercise 2. b)

#

# Define HERE the crossover operation

#

#

"""

Perform a single point crossover on the input individuals.

The point of crossover is selected at random and the resulting

individuals are returned.

"""

index = len(ind1.solution) - 1

for i in range(len(ind1.solution)):

# Create the offspring by combining the solutions of the parents

if all(item not in ind2.solution[i:] for item in ind1.solution[:i + 1]):

index = i

tmp = ind1.solution[index:].copy()

ind1.solution[index:] = ind2.solution[index:]

ind2.solution[index:] = tmp

return Individual(solution=ind1.solution,fitness=ind1.fitness), Individual(solution=ind2.solution, fitness=ind2.fitness)

**Q3:**

def mutation(self, individual, indpb):

#

# Exercise 2. c)

#

# Define HERE the mutation operation

#

# Mutate an individual by randomly selecting two positions in the solution and swapping them.

for i in range(len(individual.solution)):

r = random.random()

if r <= indpb:

individual.solution[i] = random.randint(

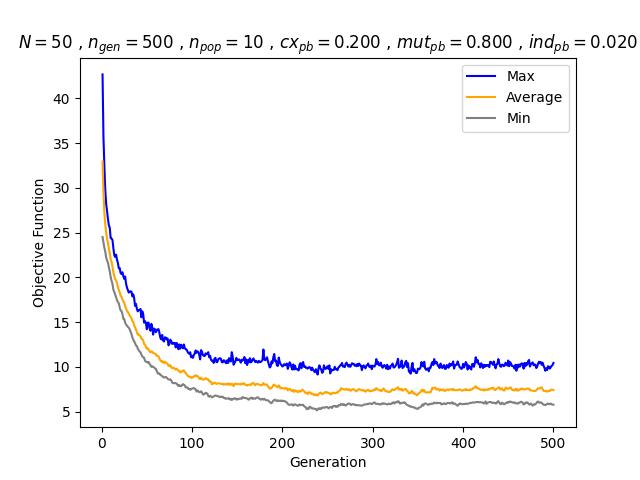
0, self.problem.size - 1)

return individual

**Q4:**

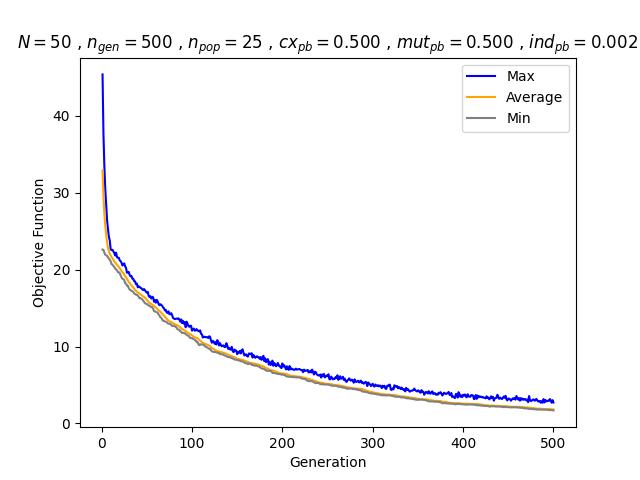
**SETTING 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Generation | Minimum Fitness | Maximum Fitness | Average Fitness | Standard deviation |
| 1 | 24.5 | 42.667 | 32.937 | 5.345 |
| 2 | 23.9 | 35.667 | 29.547 | 3.768 |
| 3 | 23.3 | 32.467 | 27.26 | 2.878 |
| 4 | 22.867 | 29.8 | 25.913 | 2.1 |
| 5 | 22.2 | 28.2 | 24.98 | 1.87 |
| 6 | 21.867 | 27.4 | 24.26 | 1.708 |
| 7 | 21.633 | 26.5 | 23.847 | 1.532 |
| 8 | 21.1 | 25.8 | 23.183 | 1.459 |
| 9 | 20.667 | 25.533 | 22.717 | 1.46 |
| 10 | 20.033 | 24.367 | 22.04 | 1.306 |
| 11 | 19.6 | 24.333 | 21.71 | 1.43 |
| 12 | 19.267 | 24.167 | 21.187 | 1.456 |
| 13 | 18.6 | 23.233 | 20.51 | 1.414 |
| 14 | 18.367 | 22.467 | 20.12 | 1.298 |
| 15 | 18.067 | 22.267 | 19.777 | 1.262 |
| 16 | 17.8 | 22.533 | 19.677 | 1.444 |
| 17 | 17.467 | 21.967 | 19.327 | 1.374 |
| 18 | 17.233 | 21.6 | 18.913 | 1.353 |
| 19 | 17.1 | 21 | 18.57 | 1.224 |
| 20 | 16.633 | 21.033 | 18.303 | 1.3 |
| 21 | 16.3 | 20.467 | 17.957 | 1.242 |
| 22 | 16.233 | 20.367 | 17.823 | 1.343 |
| 23 | 15.9 | 20.567 | 17.537 | 1.49 |
| 24 | 15.367 | 20.133 | 17.337 | 1.421 |
| 25 | 15.333 | 19.833 | 17.14 | 1.415 |
| 26 | 14.933 | 20.1 | 16.77 | 1.555 |
| 27 | 14.733 | 19.3 | 16.537 | 1.403 |
| 28 | 14.6 | 18.867 | 16.263 | 1.295 |
| 29 | 14.467 | 18.6 | 16.12 | 1.261 |
| 30 | 14.367 | 18.3 | 15.95 | 1.244 |
| 31 | 14.2 | 18.4 | 15.72 | 1.317 |
| 32 | 13.933 | 18.433 | 15.6 | 1.366 |
| 33 | 13.667 | 18.4 | 15.42 | 1.439 |
| 34 | 13.3 | 17.867 | 15.113 | 1.385 |
| 35 | 13.033 | 18.1 | 15.01 | 1.541 |
| 36 | 12.833 | 17.667 | 14.65 | 1.471 |
| 37 | 12.667 | 16.8 | 14.38 | 1.297 |
| 38 | 12.367 | 17.033 | 14.163 | 1.394 |
| 39 | 12.333 | 16.467 | 13.85 | 1.308 |
| 40 | 12.033 | 16.2 | 13.613 | 1.27 |
| 41 | 11.867 | 16.333 | 13.643 | 1.401 |
| 42 | 11.7 | 16.367 | 13.483 | 1.438 |
| 43 | 11.633 | 16.467 | 13.413 | 1.5 |
| 44 | 11.367 | 15.533 | 13.14 | 1.321 |
| 45 | 11.167 | 16.2 | 13.093 | 1.491 |
| 46 | 11.067 | 15.867 | 12.933 | 1.476 |
| 47 | 11.033 | 14.933 | 12.55 | 1.232 |
| 48 | 10.667 | 15.1 | 12.473 | 1.362 |
| 49 | 10.567 | 14.9 | 12.253 | 1.358 |
| 50 | 10.567 | 14.2 | 12.02 | 1.178 |
| 51 | 10.467 | 14.933 | 12.08 | 1.42 |
| 52 | 10.533 | 14.933 | 11.897 | 1.37 |
| 53 | 10.333 | 14.3 | 11.723 | 1.273 |
| 54 | 10.2 | 14.033 | 11.623 | 1.245 |
| 55 | 10 | 14.8 | 11.727 | 1.471 |
| 56 | 10.067 | 14.4 | 11.703 | 1.372 |
| 57 | 10 | 13.6 | 11.54 | 1.163 |
| 58 | 9.933 | 14.267 | 11.52 | 1.35 |
| 59 | 9.833 | 14.2 | 11.457 | 1.355 |
| 60 | 9.767 | 13.867 | 11.423 | 1.313 |
| 61 | 9.533 | 14.067 | 11.22 | 1.417 |
| 62 | 9.267 | 14.2 | 11.24 | 1.522 |
| 63 | 9.233 | 14.2 | 11.15 | 1.524 |
| 64 | 9.267 | 13.767 | 10.937 | 1.421 |
| 65 | 9.1 | 13.233 | 10.7 | 1.247 |
| 66 | 9.033 | 13.067 | 10.583 | 1.278 |
| 67 | 8.967 | 13.567 | 10.657 | 1.439 |
| 68 | 8.867 | 12.933 | 10.463 | 1.306 |
| 69 | 8.8 | 12.833 | 10.447 | 1.272 |
| 70 | 8.833 | 13.3 | 10.58 | 1.425 |
| 71 | 8.867 | 13.267 | 10.45 | 1.389 |
| 72 | 8.8 | 13.067 | 10.417 | 1.348 |
| 73 | 8.667 | 13.167 | 10.337 | 1.404 |
| 74 | 8.6 | 12.4 | 10.093 | 1.234 |
| 75 | 8.567 | 12.567 | 10.17 | 1.297 |
| 76 | 8.6 | 13.033 | 10.18 | 1.45 |
| 77 | 8.5 | 12.867 | 9.927 | 1.379 |
| 78 | 8.267 | 12.567 | 9.87 | 1.393 |
| 79 | 8.167 | 12.7 | 9.897 | 1.503 |
| 80 | 8.167 | 12.567 | 9.887 | 1.438 |
| 81 | 8.2 | 12.667 | 9.77 | 1.386 |
| 82 | 8.167 | 12.167 | 9.683 | 1.334 |
| 83 | 8.133 | 12.667 | 9.803 | 1.441 |
| 84 | 7.967 | 12.467 | 9.697 | 1.42 |
| 85 | 7.867 | 11.967 | 9.537 | 1.308 |
| 86 | 7.967 | 12.5 | 9.53 | 1.454 |
| 87 | 7.867 | 12.033 | 9.363 | 1.364 |
| 88 | 7.833 | 12.467 | 9.47 | 1.43 |
| 89 | 7.967 | 12.333 | 9.47 | 1.344 |
| 90 | 8.067 | 12.067 | 9.58 | 1.301 |
| 91 | 8 | 12.5 | 9.61 | 1.406 |
| 92 | 7.933 | 12.1 | 9.387 | 1.289 |
| 93 | 7.7 | 11.967 | 9.33 | 1.329 |
| 94 | 7.7 | 11.933 | 9.167 | 1.384 |
| 95 | 7.7 | 11.7 | 9.05 | 1.307 |
| 96 | 7.533 | 11.533 | 8.927 | 1.256 |
| 97 | 7.533 | 11.467 | 8.893 | 1.236 |
| 98 | 7.433 | 11.633 | 8.883 | 1.357 |
| 99 | 7.5 | 11.067 | 8.767 | 1.163 |
| 100 | 7.567 | 11.233 | 8.82 | 1.207 |
| 101 | 7.6 | 11 | 8.807 | 1.118 |
| 102 | 7.633 | 11.333 | 8.94 | 1.217 |
| 103 | 7.567 | 11.467 | 8.947 | 1.268 |
| 104 | 7.467 | 11.833 | 9.073 | 1.399 |
| 105 | 7.233 | 11.567 | 8.96 | 1.352 |
| 106 | 7.367 | 11.733 | 8.983 | 1.404 |
| 107 | 7.267 | 11.633 | 8.893 | 1.405 |
| 108 | 7.167 | 11.367 | 8.67 | 1.338 |
| 109 | 7.2 | 10.833 | 8.65 | 1.208 |
| 110 | 7.267 | 11.867 | 8.793 | 1.427 |
| 111 | 7.133 | 11.7 | 8.643 | 1.446 |
| 112 | 6.933 | 11.333 | 8.567 | 1.337 |
| 113 | 6.9 | 11.233 | 8.59 | 1.348 |
| 114 | 6.967 | 11.2 | 8.643 | 1.336 |
| 115 | 7.1 | 11.5 | 8.737 | 1.356 |
| 116 | 7.067 | 11.4 | 8.69 | 1.387 |
| 117 | 7 | 11.5 | 8.597 | 1.418 |
| 118 | 6.733 | 11.633 | 8.607 | 1.53 |
| 119 | 6.667 | 11.067 | 8.39 | 1.39 |
| 120 | 6.767 | 11.233 | 8.403 | 1.394 |
| 121 | 6.7 | 10.8 | 8.303 | 1.291 |
| 122 | 6.6 | 10.667 | 8.047 | 1.267 |
| 123 | 6.633 | 10.7 | 8.157 | 1.295 |
| 124 | 6.7 | 10.433 | 8.13 | 1.239 |
| 125 | 6.767 | 10.933 | 8.233 | 1.312 |
| 126 | 6.8 | 11 | 8.203 | 1.38 |
| 127 | 6.767 | 10.533 | 8.093 | 1.224 |
| 128 | 6.733 | 10.533 | 8.123 | 1.278 |
| 129 | 6.7 | 10.833 | 8.153 | 1.344 |
| 130 | 6.7 | 10.933 | 8.157 | 1.335 |
| 131 | 6.6 | 10.967 | 8.117 | 1.345 |
| 132 | 6.667 | 10.9 | 8.107 | 1.361 |
| 133 | 6.633 | 10.533 | 8.087 | 1.278 |
| 134 | 6.667 | 10.5 | 8.12 | 1.226 |
| 135 | 6.533 | 10.733 | 7.993 | 1.289 |
| 136 | 6.533 | 10.7 | 8.097 | 1.313 |
| 137 | 6.433 | 10.467 | 8.03 | 1.261 |
| 138 | 6.467 | 10.4 | 8.057 | 1.229 |
| 139 | 6.467 | 10.733 | 8.127 | 1.387 |
| 140 | 6.433 | 10.433 | 7.99 | 1.262 |
| 141 | 6.5 | 10.967 | 8.15 | 1.402 |
| 142 | 6.4 | 10.633 | 8.03 | 1.372 |
| 143 | 6.3 | 10.6 | 7.98 | 1.345 |
| 144 | 6.433 | 11.633 | 8.117 | 1.628 |
| 145 | 6.333 | 11.167 | 8.063 | 1.482 |
| 146 | 6.433 | 10.233 | 7.843 | 1.197 |
| 147 | 6.5 | 10.433 | 8.043 | 1.296 |
| 148 | 6.467 | 10.6 | 8.14 | 1.342 |
| 149 | 6.333 | 11 | 8.083 | 1.439 |
| 150 | 6.433 | 10.767 | 8.083 | 1.378 |
| 151 | 6.367 | 10.767 | 8.08 | 1.339 |
| 152 | 6.433 | 10.833 | 8.063 | 1.38 |
| 153 | 6.433 | 10.7 | 8.063 | 1.365 |
| 154 | 6.467 | 10.467 | 8.02 | 1.307 |
| 155 | 6.433 | 10.8 | 8.117 | 1.407 |
| 156 | 6.633 | 10.7 | 8.083 | 1.352 |
| 157 | 6.567 | 10.833 | 8.167 | 1.458 |
| 158 | 6.5 | 11.1 | 8.113 | 1.467 |
| 159 | 6.533 | 10.4 | 7.98 | 1.272 |
| 160 | 6.5 | 10.833 | 7.99 | 1.369 |
| 161 | 6.467 | 10.2 | 7.91 | 1.203 |
| 162 | 6.367 | 10.733 | 7.977 | 1.333 |
| 163 | 6.333 | 10.5 | 7.993 | 1.317 |
| 164 | 6.467 | 10.967 | 8.02 | 1.398 |
| 165 | 6.533 | 10.5 | 7.947 | 1.243 |
| 166 | 6.567 | 10.567 | 8.133 | 1.302 |
| 167 | 6.4 | 10.833 | 8.153 | 1.404 |
| 168 | 6.5 | 10.933 | 8.213 | 1.445 |
| 169 | 6.467 | 10.733 | 8.04 | 1.371 |
| 170 | 6.433 | 10.533 | 7.937 | 1.308 |
| 171 | 6.533 | 10.667 | 8.07 | 1.285 |
| 172 | 6.567 | 10.567 | 8.11 | 1.286 |
| 173 | 6.6 | 10.467 | 8.053 | 1.285 |
| 174 | 6.467 | 10.667 | 8.02 | 1.319 |
| 175 | 6.433 | 10.533 | 8.007 | 1.338 |
| 176 | 6.333 | 10.533 | 7.943 | 1.327 |
| 177 | 6.367 | 10.633 | 7.95 | 1.354 |
| 178 | 6.433 | 10.767 | 7.993 | 1.347 |
| 179 | 6.333 | 11.933 | 8.183 | 1.679 |
| 180 | 6.433 | 10.833 | 8.017 | 1.455 |
| 181 | 6.333 | 10.733 | 8.003 | 1.433 |
| 182 | 6.267 | 10.867 | 8.023 | 1.465 |
| 183 | 6.267 | 11.067 | 8.033 | 1.539 |
| 184 | 6.267 | 10.633 | 7.803 | 1.392 |
| 185 | 6.167 | 10.267 | 7.74 | 1.3 |
| 186 | 6.067 | 9.933 | 7.547 | 1.194 |
| 187 | 6 | 10.033 | 7.58 | 1.296 |
| 188 | 5.933 | 10.6 | 7.637 | 1.458 |
| 189 | 6.1 | 10.4 | 7.74 | 1.412 |
| 190 | 6.2 | 11.067 | 7.963 | 1.549 |
| 191 | 6.3 | 11.433 | 8.013 | 1.57 |
| 192 | 6.333 | 10.633 | 7.89 | 1.41 |
| 193 | 6.233 | 10.7 | 7.843 | 1.439 |
| 194 | 6.167 | 10.167 | 7.763 | 1.296 |
| 195 | 6.267 | 10.1 | 7.707 | 1.246 |
| 196 | 6.2 | 11.033 | 7.927 | 1.463 |
| 197 | 6.2 | 10.567 | 7.793 | 1.428 |
| 198 | 6.233 | 10.3 | 7.59 | 1.349 |
| 199 | 6.167 | 10.2 | 7.647 | 1.326 |
| 200 | 6.233 | 10.033 | 7.61 | 1.266 |
| 201 | 6.167 | 10.133 | 7.61 | 1.323 |
| 202 | 6.2 | 10.3 | 7.593 | 1.301 |
| 203 | 6.133 | 10.167 | 7.53 | 1.334 |
| 204 | 6.1 | 10.267 | 7.643 | 1.33 |
| 205 | 6 | 10.367 | 7.577 | 1.381 |
| 206 | 5.867 | 9.767 | 7.367 | 1.248 |
| 207 | 5.767 | 10.1 | 7.483 | 1.433 |
| 208 | 5.767 | 10.5 | 7.527 | 1.498 |
| 209 | 5.767 | 10.333 | 7.49 | 1.467 |
| 210 | 5.8 | 9.967 | 7.32 | 1.354 |
| 211 | 5.8 | 9.7 | 7.31 | 1.273 |
| 212 | 5.667 | 10.267 | 7.423 | 1.445 |
| 213 | 5.8 | 9.7 | 7.193 | 1.287 |
| 214 | 5.8 | 10.133 | 7.36 | 1.433 |
| 215 | 5.767 | 9.767 | 7.34 | 1.315 |
| 216 | 5.7 | 9.733 | 7.283 | 1.321 |
| 217 | 5.667 | 9.733 | 7.167 | 1.272 |
| 218 | 5.667 | 9.6 | 7.217 | 1.296 |
| 219 | 5.8 | 10.267 | 7.34 | 1.442 |
| 220 | 5.733 | 10.4 | 7.237 | 1.467 |
| 221 | 5.733 | 9.833 | 7.27 | 1.32 |
| 222 | 5.733 | 10.4 | 7.457 | 1.446 |
| 223 | 5.767 | 10.533 | 7.38 | 1.493 |
| 224 | 5.6 | 10 | 7.3 | 1.405 |
| 225 | 5.533 | 10.067 | 7.12 | 1.458 |
| 226 | 5.467 | 9.9 | 7.06 | 1.396 |
| 227 | 5.267 | 9.9 | 7.117 | 1.473 |
| 228 | 5.367 | 9.8 | 6.95 | 1.381 |
| 229 | 5.3 | 9.933 | 7.103 | 1.418 |
| 230 | 5.533 | 9.967 | 7.163 | 1.446 |
| 231 | 5.533 | 9.9 | 7.12 | 1.434 |
| 232 | 5.4 | 9.633 | 6.967 | 1.373 |
| 233 | 5.333 | 9.9 | 7.007 | 1.421 |
| 234 | 5.367 | 9.667 | 6.973 | 1.406 |
| 235 | 5.333 | 9.533 | 6.843 | 1.361 |
| 236 | 5.3 | 9.4 | 6.867 | 1.311 |
| 237 | 5.3 | 9.733 | 6.94 | 1.436 |
| 238 | 5.133 | 9.533 | 6.83 | 1.396 |
| 239 | 5.233 | 9.133 | 6.793 | 1.256 |
| 240 | 5.367 | 9.833 | 6.957 | 1.392 |
| 241 | 5.3 | 10.167 | 7.03 | 1.532 |
| 242 | 5.367 | 9.833 | 7.127 | 1.428 |
| 243 | 5.3 | 9.7 | 7.077 | 1.35 |
| 244 | 5.433 | 9.333 | 6.943 | 1.285 |
| 245 | 5.467 | 9.433 | 6.987 | 1.291 |
| 246 | 5.433 | 10.167 | 7.08 | 1.482 |
| 247 | 5.433 | 9.833 | 7.133 | 1.397 |
| 248 | 5.5 | 9.767 | 7.2 | 1.38 |
| 249 | 5.5 | 9.9 | 7.11 | 1.403 |
| 250 | 5.5 | 10.067 | 7.15 | 1.476 |
| 251 | 5.367 | 9.767 | 7.093 | 1.489 |
| 252 | 5.433 | 10.167 | 7.067 | 1.498 |
| 253 | 5.5 | 9.267 | 6.923 | 1.214 |
| 254 | 5.533 | 9.733 | 7.02 | 1.338 |
| 255 | 5.4 | 9.6 | 6.987 | 1.305 |
| 256 | 5.6 | 9.633 | 7.12 | 1.309 |
| 257 | 5.633 | 9.667 | 7.063 | 1.286 |
| 258 | 5.633 | 10 | 7.06 | 1.413 |
| 259 | 5.533 | 9.733 | 7.067 | 1.311 |
| 260 | 5.6 | 9.733 | 7.13 | 1.341 |
| 261 | 5.533 | 9.633 | 7.093 | 1.292 |
| 262 | 5.667 | 9.933 | 7.233 | 1.307 |
| 263 | 5.733 | 10 | 7.337 | 1.359 |
| 264 | 5.7 | 10.167 | 7.363 | 1.404 |
| 265 | 5.867 | 10.2 | 7.623 | 1.419 |
| 266 | 5.8 | 10.433 | 7.553 | 1.463 |
| 267 | 5.733 | 10.033 | 7.513 | 1.428 |
| 268 | 5.833 | 10.1 | 7.483 | 1.331 |
| 269 | 5.733 | 9.967 | 7.437 | 1.396 |
| 270 | 5.667 | 10.333 | 7.487 | 1.437 |
| 271 | 5.767 | 10.467 | 7.557 | 1.504 |
| 272 | 5.833 | 10.233 | 7.43 | 1.462 |
| 273 | 5.9 | 10.033 | 7.417 | 1.382 |
| 274 | 5.9 | 10.233 | 7.51 | 1.389 |
| 275 | 5.833 | 10 | 7.343 | 1.313 |
| 276 | 5.733 | 10.133 | 7.35 | 1.372 |
| 277 | 5.8 | 10.4 | 7.46 | 1.423 |
| 278 | 5.833 | 10.333 | 7.52 | 1.41 |
| 279 | 5.8 | 10.333 | 7.487 | 1.46 |
| 280 | 5.8 | 10.133 | 7.377 | 1.376 |
| 281 | 5.7 | 10.233 | 7.353 | 1.439 |
| 282 | 5.733 | 10.067 | 7.253 | 1.364 |
| 283 | 5.733 | 10.333 | 7.39 | 1.438 |
| 284 | 5.7 | 10.1 | 7.463 | 1.451 |
| 285 | 5.7 | 10.367 | 7.52 | 1.486 |
| 286 | 5.7 | 10.167 | 7.45 | 1.385 |
| 287 | 5.667 | 10.133 | 7.42 | 1.419 |
| 288 | 5.667 | 9.633 | 7.37 | 1.301 |
| 289 | 5.7 | 10.067 | 7.4 | 1.412 |
| 290 | 5.767 | 10.167 | 7.317 | 1.374 |
| 291 | 5.8 | 9.967 | 7.353 | 1.38 |
| 292 | 5.8 | 9.833 | 7.217 | 1.296 |
| 293 | 5.8 | 10.133 | 7.307 | 1.356 |
| 294 | 5.867 | 10.2 | 7.397 | 1.419 |
| 295 | 5.833 | 10.367 | 7.443 | 1.469 |
| 296 | 5.9 | 10.033 | 7.307 | 1.39 |
| 297 | 5.9 | 9.967 | 7.257 | 1.333 |
| 298 | 5.9 | 10.133 | 7.327 | 1.378 |
| 299 | 5.833 | 9.733 | 7.317 | 1.289 |
| 300 | 5.9 | 10.133 | 7.357 | 1.343 |
| 301 | 5.967 | 10.067 | 7.347 | 1.311 |
| 302 | 6.033 | 10.033 | 7.487 | 1.325 |
| 303 | 5.9 | 10.233 | 7.427 | 1.357 |
| 304 | 5.867 | 10.867 | 7.623 | 1.558 |
| 305 | 5.867 | 10.333 | 7.497 | 1.448 |
| 306 | 5.867 | 10.533 | 7.48 | 1.489 |
| 307 | 5.8 | 10.167 | 7.39 | 1.364 |
| 308 | 5.833 | 10.167 | 7.347 | 1.363 |
| 309 | 5.8 | 10.467 | 7.397 | 1.466 |
| 310 | 5.867 | 10.033 | 7.29 | 1.307 |
| 311 | 5.933 | 9.9 | 7.437 | 1.317 |
| 312 | 5.867 | 10.133 | 7.59 | 1.369 |
| 313 | 5.9 | 10.2 | 7.44 | 1.367 |
| 314 | 5.867 | 10.033 | 7.293 | 1.31 |
| 315 | 5.833 | 9.8 | 7.313 | 1.319 |
| 316 | 5.8 | 10.233 | 7.233 | 1.361 |
| 317 | 5.833 | 9.733 | 7.2 | 1.236 |
| 318 | 5.9 | 10.033 | 7.22 | 1.322 |
| 319 | 5.833 | 9.8 | 7.183 | 1.333 |
| 320 | 5.867 | 10.1 | 7.28 | 1.343 |
| 321 | 5.867 | 10.2 | 7.417 | 1.368 |
| 322 | 6 | 10.367 | 7.493 | 1.413 |
| 323 | 6.033 | 9.933 | 7.407 | 1.265 |
| 324 | 5.9 | 9.933 | 7.41 | 1.249 |
| 325 | 6.033 | 10.067 | 7.51 | 1.272 |
| 326 | 6.067 | 10.233 | 7.603 | 1.35 |
| 327 | 6.033 | 10.5 | 7.597 | 1.453 |
| 328 | 6.167 | 10.9 | 7.723 | 1.55 |
| 329 | 6.1 | 9.9 | 7.46 | 1.217 |
| 330 | 5.9 | 9.967 | 7.5 | 1.333 |
| 331 | 5.9 | 10.167 | 7.43 | 1.333 |
| 332 | 5.967 | 10.7 | 7.543 | 1.503 |
| 333 | 6 | 9.867 | 7.337 | 1.223 |
| 334 | 5.967 | 9.967 | 7.38 | 1.275 |
| 335 | 6.033 | 10.1 | 7.487 | 1.319 |
| 336 | 5.967 | 10.5 | 7.527 | 1.428 |
| 337 | 5.833 | 10.667 | 7.493 | 1.499 |
| 338 | 5.733 | 9.967 | 7.3 | 1.337 |
| 339 | 5.7 | 10.4 | 7.24 | 1.458 |
| 340 | 5.667 | 9.467 | 7.04 | 1.22 |
| 341 | 5.567 | 9.467 | 7.047 | 1.291 |
| 342 | 5.6 | 9.233 | 7.067 | 1.193 |
| 343 | 5.533 | 10 | 7.317 | 1.401 |
| 344 | 5.5 | 10.433 | 7.247 | 1.542 |
| 345 | 5.5 | 9.5 | 7.01 | 1.309 |
| 346 | 5.433 | 9.733 | 7.037 | 1.326 |
| 347 | 5.433 | 9.5 | 6.953 | 1.284 |
| 348 | 5.333 | 9.3 | 6.9 | 1.269 |
| 349 | 5.333 | 9.333 | 6.817 | 1.28 |
| 350 | 5.3 | 9.8 | 6.947 | 1.426 |
| 351 | 5.433 | 9.733 | 7.057 | 1.426 |
| 352 | 5.467 | 9.767 | 7.11 | 1.374 |
| 353 | 5.5 | 9.967 | 7.2 | 1.341 |
| 354 | 5.633 | 10.533 | 7.4 | 1.488 |
| 355 | 5.8 | 10.167 | 7.423 | 1.404 |
| 356 | 5.667 | 10.033 | 7.233 | 1.373 |
| 357 | 5.867 | 10.567 | 7.403 | 1.476 |
| 358 | 5.9 | 9.833 | 7.177 | 1.248 |
| 359 | 5.9 | 9.667 | 7.123 | 1.215 |
| 360 | 5.833 | 9.767 | 7.15 | 1.261 |
| 361 | 5.767 | 9.833 | 7.15 | 1.273 |
| 362 | 5.767 | 9.5 | 7.147 | 1.213 |
| 363 | 5.867 | 9.9 | 7.167 | 1.295 |
| 364 | 5.833 | 9.9 | 7.153 | 1.268 |
| 365 | 5.9 | 10.3 | 7.383 | 1.413 |
| 366 | 5.867 | 10.533 | 7.673 | 1.536 |
| 367 | 5.9 | 10.2 | 7.587 | 1.392 |
| 368 | 6 | 10.867 | 7.637 | 1.527 |
| 369 | 5.933 | 10.367 | 7.697 | 1.426 |
| 370 | 5.933 | 10.567 | 7.503 | 1.456 |
| 371 | 6 | 10.5 | 7.457 | 1.412 |
| 372 | 5.933 | 10.133 | 7.533 | 1.318 |
| 373 | 5.967 | 10.1 | 7.497 | 1.315 |
| 374 | 5.967 | 9.867 | 7.333 | 1.284 |
| 375 | 5.967 | 10.367 | 7.48 | 1.447 |
| 376 | 5.8 | 10.167 | 7.403 | 1.345 |
| 377 | 5.833 | 9.867 | 7.393 | 1.289 |
| 378 | 5.867 | 10.033 | 7.49 | 1.332 |
| 379 | 5.933 | 10.2 | 7.35 | 1.369 |
| 380 | 5.867 | 9.767 | 7.297 | 1.263 |
| 381 | 5.833 | 9.8 | 7.397 | 1.279 |
| 382 | 5.933 | 10.2 | 7.44 | 1.349 |
| 383 | 5.967 | 10.067 | 7.487 | 1.34 |
| 384 | 5.967 | 9.9 | 7.373 | 1.297 |
| 385 | 5.933 | 10.367 | 7.483 | 1.384 |
| 386 | 5.9 | 10.1 | 7.5 | 1.365 |
| 387 | 6 | 10.333 | 7.473 | 1.379 |
| 388 | 6.033 | 10.2 | 7.393 | 1.315 |
| 389 | 5.867 | 10.6 | 7.543 | 1.497 |
| 390 | 5.9 | 9.8 | 7.397 | 1.285 |
| 391 | 5.9 | 10.133 | 7.393 | 1.342 |
| 392 | 5.8 | 10.233 | 7.393 | 1.418 |
| 393 | 5.7 | 10.233 | 7.377 | 1.46 |
| 394 | 5.667 | 10.6 | 7.393 | 1.516 |
| 395 | 5.767 | 10.3 | 7.45 | 1.405 |
| 396 | 5.9 | 10 | 7.487 | 1.301 |
| 397 | 5.9 | 9.9 | 7.437 | 1.319 |
| 398 | 5.833 | 9.767 | 7.383 | 1.276 |
| 399 | 5.833 | 9.833 | 7.323 | 1.311 |
| 400 | 5.833 | 10.333 | 7.397 | 1.471 |
| 401 | 5.867 | 9.933 | 7.407 | 1.337 |
| 402 | 5.833 | 10.2 | 7.403 | 1.4 |
| 403 | 5.9 | 10.533 | 7.537 | 1.531 |
| 404 | 5.867 | 10.333 | 7.403 | 1.395 |
| 405 | 5.867 | 9.7 | 7.423 | 1.252 |
| 406 | 5.9 | 10.167 | 7.437 | 1.357 |
| 407 | 5.933 | 9.867 | 7.373 | 1.27 |
| 408 | 5.967 | 9.967 | 7.483 | 1.244 |
| 409 | 5.967 | 9.7 | 7.437 | 1.226 |
| 410 | 6 | 10.3 | 7.483 | 1.333 |
| 411 | 6.033 | 10.333 | 7.62 | 1.367 |
| 412 | 6 | 10 | 7.63 | 1.324 |
| 413 | 6.033 | 10.4 | 7.72 | 1.41 |
| 414 | 6.033 | 11.067 | 7.84 | 1.575 |
| 415 | 6.067 | 10.5 | 7.63 | 1.417 |
| 416 | 6.067 | 10.767 | 7.67 | 1.492 |
| 417 | 6.067 | 10.333 | 7.547 | 1.37 |
| 418 | 6.033 | 10.333 | 7.507 | 1.366 |
| 419 | 6.067 | 9.933 | 7.483 | 1.27 |
| 420 | 6.033 | 10.4 | 7.433 | 1.394 |
| 421 | 6.033 | 10.2 | 7.443 | 1.334 |
| 422 | 5.967 | 9.867 | 7.383 | 1.266 |
| 423 | 5.9 | 10.233 | 7.487 | 1.321 |
| 424 | 6.033 | 10 | 7.343 | 1.296 |
| 425 | 6.133 | 10.2 | 7.47 | 1.348 |
| 426 | 5.867 | 10.1 | 7.447 | 1.372 |
| 427 | 5.967 | 10.2 | 7.417 | 1.381 |
| 428 | 6.033 | 10.167 | 7.54 | 1.339 |
| 429 | 6.067 | 9.967 | 7.467 | 1.303 |
| 430 | 6.067 | 10.567 | 7.577 | 1.432 |
| 431 | 6.067 | 10.533 | 7.603 | 1.405 |
| 432 | 5.967 | 10.4 | 7.567 | 1.411 |
| 433 | 5.967 | 10.233 | 7.683 | 1.418 |
| 434 | 6 | 10.6 | 7.613 | 1.458 |
| 435 | 5.967 | 10.167 | 7.407 | 1.304 |
| 436 | 5.9 | 9.833 | 7.437 | 1.26 |
| 437 | 5.933 | 10.267 | 7.537 | 1.358 |
| 438 | 6.1 | 10.333 | 7.59 | 1.372 |
| 439 | 6.167 | 10.867 | 7.69 | 1.505 |
| 440 | 6 | 10.433 | 7.697 | 1.426 |
| 441 | 5.867 | 10.067 | 7.463 | 1.355 |
| 442 | 5.833 | 10 | 7.55 | 1.324 |
| 443 | 6 | 10.233 | 7.607 | 1.367 |
| 444 | 5.933 | 10.233 | 7.417 | 1.383 |
| 445 | 5.833 | 10.067 | 7.357 | 1.316 |
| 446 | 5.833 | 10.133 | 7.37 | 1.354 |
| 447 | 5.933 | 10.467 | 7.687 | 1.503 |
| 448 | 5.967 | 10.3 | 7.647 | 1.452 |
| 449 | 6.067 | 10.133 | 7.533 | 1.32 |
| 450 | 6 | 10.7 | 7.557 | 1.484 |
| 451 | 6.067 | 10.067 | 7.593 | 1.291 |
| 452 | 6.133 | 10.533 | 7.7 | 1.404 |
| 453 | 6.067 | 10.367 | 7.67 | 1.37 |
| 454 | 6.067 | 10.1 | 7.45 | 1.305 |
| 455 | 6 | 10.1 | 7.387 | 1.322 |
| 456 | 6 | 10 | 7.4 | 1.295 |
| 457 | 6.033 | 9.8 | 7.357 | 1.22 |
| 458 | 5.933 | 10.233 | 7.55 | 1.326 |
| 459 | 5.9 | 9.567 | 7.357 | 1.209 |
| 460 | 5.933 | 10.233 | 7.503 | 1.382 |
| 461 | 5.9 | 9.933 | 7.337 | 1.263 |
| 462 | 6 | 10.267 | 7.443 | 1.372 |
| 463 | 6.033 | 10.033 | 7.447 | 1.292 |
| 464 | 6.1 | 10.3 | 7.577 | 1.337 |
| 465 | 6.067 | 10.4 | 7.507 | 1.367 |
| 466 | 6 | 10.233 | 7.567 | 1.384 |
| 467 | 5.8 | 9.8 | 7.473 | 1.288 |
| 468 | 5.833 | 10.433 | 7.473 | 1.397 |
| 469 | 6 | 10.067 | 7.503 | 1.324 |
| 470 | 5.967 | 10.433 | 7.557 | 1.4 |
| 471 | 6.033 | 10.233 | 7.583 | 1.389 |
| 472 | 5.933 | 10.633 | 7.53 | 1.467 |
| 473 | 5.8 | 10.767 | 7.57 | 1.52 |
| 474 | 5.8 | 10.033 | 7.377 | 1.392 |
| 475 | 5.9 | 10.3 | 7.373 | 1.457 |
| 476 | 5.8 | 10.4 | 7.35 | 1.459 |
| 477 | 5.667 | 10.5 | 7.34 | 1.485 |
| 478 | 5.8 | 10.167 | 7.317 | 1.384 |
| 479 | 5.767 | 10.267 | 7.283 | 1.418 |
| 480 | 5.833 | 10.233 | 7.313 | 1.382 |
| 481 | 5.933 | 9.867 | 7.36 | 1.2 |
| 482 | 6.067 | 10.033 | 7.513 | 1.253 |
| 483 | 6.133 | 10.367 | 7.603 | 1.335 |
| 484 | 6 | 10.567 | 7.577 | 1.438 |
| 485 | 6 | 10.4 | 7.603 | 1.386 |
| 486 | 6.033 | 10.533 | 7.69 | 1.385 |
| 487 | 5.967 | 10.233 | 7.693 | 1.396 |
| 488 | 5.867 | 10.467 | 7.52 | 1.461 |
| 489 | 5.767 | 10.133 | 7.33 | 1.41 |
| 490 | 5.767 | 9.9 | 7.283 | 1.339 |
| 491 | 5.733 | 9.567 | 7.313 | 1.284 |
| 492 | 5.767 | 9.833 | 7.277 | 1.327 |
| 493 | 5.867 | 9.633 | 7.217 | 1.237 |
| 494 | 5.9 | 10.067 | 7.303 | 1.314 |
| 495 | 5.833 | 10 | 7.3 | 1.313 |
| 496 | 5.833 | 9.8 | 7.297 | 1.248 |
| 497 | 5.9 | 9.967 | 7.437 | 1.343 |
| 498 | 5.8 | 10.1 | 7.45 | 1.356 |
| 499 | 5.8 | 10.2 | 7.443 | 1.441 |
| 500 | 5.767 | 10.433 | 7.4 | 1.486 |

****

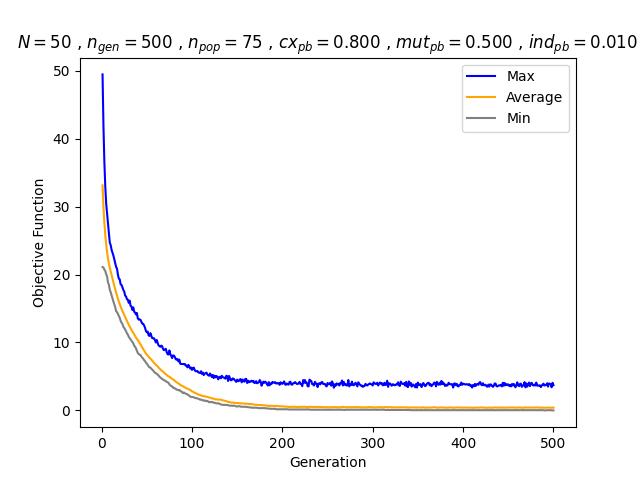
**SETTING 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Generation | Minimum Fitness | Maximum Fitness | Average Fitness | Standard deviation |
| 1 | 22.6 | 45.367 | 32.887 | 5.51 |
| 2 | 22.567 | 37.633 | 29.584 | 4.07 |
| 3 | 22.2 | 33.467 | 27.256 | 3.149 |
| 4 | 21.933 | 30.5 | 25.736 | 2.391 |
| 5 | 21.867 | 28.533 | 24.516 | 1.922 |
| 6 | 21.767 | 26.467 | 23.539 | 1.434 |
| 7 | 21.6 | 25.267 | 22.82 | 0.987 |
| 8 | 21.433 | 24.3 | 22.357 | 0.757 |
| 9 | 21.267 | 23.767 | 22.076 | 0.557 |
| 10 | 21.067 | 22.633 | 21.833 | 0.398 |
| 11 | 20.7 | 22.533 | 21.629 | 0.482 |
| 12 | 20.633 | 22.567 | 21.459 | 0.513 |
| 13 | 20.467 | 22.367 | 21.265 | 0.516 |
| 14 | 20.333 | 22.133 | 21.055 | 0.439 |
| 15 | 20.133 | 21.833 | 20.908 | 0.421 |
| 16 | 20.033 | 22.2 | 20.799 | 0.499 |
| 17 | 19.9 | 21.6 | 20.605 | 0.451 |
| 18 | 19.667 | 21.533 | 20.48 | 0.481 |
| 19 | 19.667 | 21.533 | 20.355 | 0.503 |
| 20 | 19.533 | 21.2 | 20.163 | 0.452 |
| 21 | 19.233 | 21.1 | 20.0 | 0.457 |
| 22 | 18.967 | 20.9 | 19.809 | 0.465 |
| 23 | 18.8 | 20.533 | 19.655 | 0.445 |
| 24 | 18.767 | 20.7 | 19.529 | 0.489 |
| 25 | 18.633 | 20.8 | 19.371 | 0.537 |
| 26 | 18.267 | 20.433 | 19.172 | 0.533 |
| 27 | 18.167 | 20.2 | 18.964 | 0.518 |
| 28 | 17.9 | 19.6 | 18.761 | 0.476 |
| 29 | 17.9 | 19.6 | 18.573 | 0.45 |
| 30 | 17.6 | 19.7 | 18.396 | 0.517 |
| 31 | 17.4 | 19.3 | 18.237 | 0.451 |
| 32 | 17.333 | 19.133 | 18.097 | 0.429 |
| 33 | 17.233 | 19.167 | 17.959 | 0.495 |
| 34 | 17.2 | 18.833 | 17.801 | 0.441 |
| 35 | 17.1 | 18.8 | 17.685 | 0.44 |
| 36 | 16.9 | 18.5 | 17.521 | 0.41 |
| 37 | 16.833 | 18.467 | 17.389 | 0.409 |
| 38 | 16.733 | 18.1 | 17.236 | 0.336 |
| 39 | 16.733 | 18.167 | 17.124 | 0.341 |
| 40 | 16.6 | 17.7 | 17.013 | 0.253 |
| 41 | 16.467 | 17.8 | 16.944 | 0.313 |
| 42 | 16.267 | 17.767 | 16.863 | 0.351 |
| 43 | 16.3 | 17.633 | 16.768 | 0.33 |
| 44 | 16.2 | 17.567 | 16.693 | 0.343 |
| 45 | 16.133 | 17.433 | 16.591 | 0.301 |
| 46 | 15.933 | 17.333 | 16.493 | 0.326 |
| 47 | 15.8 | 17.467 | 16.427 | 0.355 |
| 48 | 15.633 | 17.3 | 16.335 | 0.42 |
| 49 | 15.567 | 17.133 | 16.228 | 0.412 |
| 50 | 15.533 | 17.0 | 16.075 | 0.406 |
| 51 | 15.433 | 17.1 | 15.917 | 0.434 |
| 52 | 15.333 | 16.6 | 15.771 | 0.319 |
| 53 | 15.3 | 16.433 | 15.663 | 0.301 |
| 54 | 15.167 | 16.533 | 15.592 | 0.311 |
| 55 | 15.167 | 16.233 | 15.507 | 0.272 |
| 56 | 15.1 | 16.467 | 15.436 | 0.317 |
| 57 | 14.9 | 16.4 | 15.359 | 0.344 |
| 58 | 14.6 | 15.833 | 15.233 | 0.287 |
| 59 | 14.567 | 16.033 | 15.161 | 0.361 |
| 60 | 14.5 | 15.7 | 15.063 | 0.342 |
| 61 | 14.467 | 16.067 | 14.977 | 0.43 |
| 62 | 14.4 | 15.867 | 14.827 | 0.377 |
| 63 | 14.167 | 15.533 | 14.708 | 0.339 |
| 64 | 14.033 | 15.367 | 14.6 | 0.306 |
| 65 | 13.8 | 15.5 | 14.523 | 0.383 |
| 66 | 13.733 | 15.4 | 14.407 | 0.438 |
| 67 | 13.533 | 15.3 | 14.263 | 0.437 |
| 68 | 13.333 | 15.067 | 14.12 | 0.428 |
| 69 | 13.333 | 14.967 | 14.009 | 0.412 |
| 70 | 13.267 | 14.7 | 13.867 | 0.406 |
| 71 | 13.233 | 14.767 | 13.744 | 0.407 |
| 72 | 13.167 | 14.433 | 13.608 | 0.36 |
| 73 | 13.033 | 14.367 | 13.459 | 0.366 |
| 74 | 12.967 | 14.567 | 13.352 | 0.344 |
| 75 | 12.967 | 14.2 | 13.283 | 0.288 |
| 76 | 12.933 | 14.2 | 13.239 | 0.309 |
| 77 | 12.8 | 14.333 | 13.188 | 0.348 |
| 78 | 12.667 | 14.067 | 13.104 | 0.324 |
| 79 | 12.7 | 13.733 | 13.02 | 0.251 |
| 80 | 12.7 | 13.633 | 12.96 | 0.222 |
| 81 | 12.6 | 13.567 | 12.901 | 0.248 |
| 82 | 12.567 | 13.6 | 12.847 | 0.254 |
| 83 | 12.433 | 13.633 | 12.784 | 0.281 |
| 84 | 12.233 | 13.6 | 12.74 | 0.311 |
| 85 | 12.2 | 13.667 | 12.687 | 0.334 |
| 86 | 12.167 | 13.5 | 12.581 | 0.333 |
| 87 | 11.967 | 13.233 | 12.457 | 0.33 |
| 88 | 11.933 | 13.533 | 12.388 | 0.386 |
| 89 | 11.767 | 13.033 | 12.273 | 0.301 |
| 90 | 11.767 | 13.333 | 12.22 | 0.372 |
| 91 | 11.767 | 12.967 | 12.139 | 0.317 |
| 92 | 11.733 | 13.167 | 12.091 | 0.343 |
| 93 | 11.6 | 12.5 | 11.987 | 0.264 |
| 94 | 11.567 | 13.233 | 11.937 | 0.4 |
| 95 | 11.433 | 13.0 | 11.828 | 0.37 |
| 96 | 11.4 | 12.667 | 11.737 | 0.307 |
| 97 | 11.3 | 12.567 | 11.68 | 0.296 |
| 98 | 11.1 | 12.667 | 11.627 | 0.351 |
| 99 | 11.1 | 12.7 | 11.561 | 0.36 |
| 100 | 11.1 | 12.067 | 11.437 | 0.272 |
| 101 | 11.0 | 12.2 | 11.337 | 0.292 |
| 102 | 10.967 | 12.333 | 11.272 | 0.314 |
| 103 | 10.867 | 12.067 | 11.208 | 0.262 |
| 104 | 10.8 | 12.1 | 11.176 | 0.287 |
| 105 | 10.6 | 12.267 | 11.137 | 0.357 |
| 106 | 10.633 | 12.067 | 11.096 | 0.363 |
| 107 | 10.333 | 12.067 | 10.987 | 0.415 |
| 108 | 10.167 | 11.967 | 10.892 | 0.404 |
| 109 | 10.3 | 12.1 | 10.784 | 0.418 |
| 110 | 10.267 | 11.667 | 10.664 | 0.366 |
| 111 | 10.267 | 11.567 | 10.56 | 0.344 |
| 112 | 10.267 | 11.167 | 10.469 | 0.233 |
| 113 | 10.167 | 11.267 | 10.412 | 0.242 |
| 114 | 10.1 | 11.267 | 10.373 | 0.276 |
| 115 | 9.967 | 11.2 | 10.308 | 0.261 |
| 116 | 9.933 | 11.233 | 10.277 | 0.298 |
| 117 | 9.867 | 11.2 | 10.236 | 0.282 |
| 118 | 9.767 | 11.1 | 10.171 | 0.318 |
| 119 | 9.7 | 11.333 | 10.129 | 0.402 |
| 120 | 9.7 | 11.267 | 10.043 | 0.389 |
| 121 | 9.5 | 10.8 | 9.916 | 0.302 |
| 122 | 9.367 | 10.5 | 9.823 | 0.287 |
| 123 | 9.333 | 10.733 | 9.736 | 0.308 |
| 124 | 9.3 | 10.633 | 9.671 | 0.314 |
| 125 | 9.3 | 10.367 | 9.575 | 0.283 |
| 126 | 9.267 | 10.567 | 9.529 | 0.333 |
| 127 | 9.233 | 10.267 | 9.437 | 0.259 |
| 128 | 9.2 | 10.833 | 9.417 | 0.345 |
| 129 | 9.167 | 10.567 | 9.384 | 0.315 |
| 130 | 9.167 | 10.133 | 9.339 | 0.229 |
| 131 | 9.0 | 10.433 | 9.323 | 0.311 |
| 132 | 9.0 | 10.167 | 9.285 | 0.253 |
| 133 | 9.0 | 10.033 | 9.237 | 0.235 |
| 134 | 9.0 | 10.133 | 9.205 | 0.25 |
| 135 | 8.9 | 10.133 | 9.177 | 0.26 |
| 136 | 8.833 | 9.933 | 9.135 | 0.238 |
| 137 | 8.833 | 9.933 | 9.092 | 0.259 |
| 138 | 8.767 | 10.433 | 9.068 | 0.367 |
| 139 | 8.667 | 10.133 | 9.005 | 0.335 |
| 140 | 8.633 | 9.7 | 8.935 | 0.244 |
| 141 | 8.633 | 9.833 | 8.904 | 0.31 |
| 142 | 8.6 | 9.633 | 8.831 | 0.261 |
| 143 | 8.533 | 9.6 | 8.777 | 0.244 |
| 144 | 8.5 | 9.967 | 8.76 | 0.32 |
| 145 | 8.467 | 9.433 | 8.695 | 0.225 |
| 146 | 8.367 | 9.267 | 8.644 | 0.228 |
| 147 | 8.333 | 9.6 | 8.619 | 0.323 |
| 148 | 8.3 | 9.5 | 8.536 | 0.293 |
| 149 | 8.267 | 9.467 | 8.487 | 0.279 |
| 150 | 8.267 | 9.0 | 8.411 | 0.185 |
| 151 | 8.233 | 9.3 | 8.388 | 0.235 |
| 152 | 8.167 | 9.2 | 8.352 | 0.229 |
| 153 | 8.167 | 9.433 | 8.336 | 0.274 |
| 154 | 8.1 | 9.1 | 8.297 | 0.217 |
| 155 | 8.067 | 9.533 | 8.3 | 0.322 |
| 156 | 8.067 | 9.633 | 8.271 | 0.343 |
| 157 | 8.0 | 9.167 | 8.207 | 0.254 |
| 158 | 7.933 | 8.833 | 8.157 | 0.203 |
| 159 | 7.833 | 8.967 | 8.139 | 0.262 |
| 160 | 7.833 | 8.967 | 8.1 | 0.256 |
| 161 | 7.8 | 8.733 | 8.045 | 0.24 |
| 162 | 7.7 | 8.7 | 7.98 | 0.26 |
| 163 | 7.8 | 9.1 | 7.935 | 0.309 |
| 164 | 7.767 | 9.067 | 7.892 | 0.298 |
| 165 | 7.733 | 9.0 | 7.867 | 0.277 |
| 166 | 7.633 | 9.133 | 7.863 | 0.323 |
| 167 | 7.6 | 8.567 | 7.816 | 0.224 |
| 168 | 7.6 | 8.9 | 7.819 | 0.297 |
| 169 | 7.5 | 8.733 | 7.777 | 0.271 |
| 170 | 7.533 | 8.533 | 7.747 | 0.225 |
| 171 | 7.533 | 8.667 | 7.727 | 0.273 |
| 172 | 7.5 | 8.733 | 7.688 | 0.28 |
| 173 | 7.433 | 8.6 | 7.656 | 0.251 |
| 174 | 7.4 | 8.6 | 7.631 | 0.273 |
| 175 | 7.333 | 8.4 | 7.583 | 0.245 |
| 176 | 7.233 | 8.633 | 7.553 | 0.314 |
| 177 | 7.167 | 8.267 | 7.484 | 0.279 |
| 178 | 7.133 | 8.567 | 7.451 | 0.347 |
| 179 | 7.1 | 8.8 | 7.419 | 0.395 |
| 180 | 7.067 | 8.1 | 7.321 | 0.277 |
| 181 | 6.967 | 8.467 | 7.283 | 0.354 |
| 182 | 6.9 | 7.967 | 7.195 | 0.249 |
| 183 | 6.833 | 8.133 | 7.147 | 0.301 |
| 184 | 6.867 | 8.367 | 7.135 | 0.379 |
| 185 | 6.833 | 7.667 | 7.013 | 0.231 |
| 186 | 6.833 | 8.033 | 6.993 | 0.296 |
| 187 | 6.833 | 7.6 | 6.927 | 0.177 |
| 188 | 6.767 | 7.767 | 6.911 | 0.223 |
| 189 | 6.567 | 8.167 | 6.912 | 0.338 |
| 190 | 6.567 | 7.5 | 6.848 | 0.191 |
| 191 | 6.567 | 7.867 | 6.843 | 0.297 |
| 192 | 6.533 | 7.7 | 6.799 | 0.25 |
| 193 | 6.5 | 7.433 | 6.74 | 0.222 |
| 194 | 6.5 | 7.567 | 6.689 | 0.282 |
| 195 | 6.433 | 7.867 | 6.648 | 0.339 |
| 196 | 6.433 | 7.5 | 6.567 | 0.26 |
| 197 | 6.433 | 7.5 | 6.537 | 0.241 |
| 198 | 6.4 | 7.3 | 6.519 | 0.213 |
| 199 | 6.333 | 7.2 | 6.487 | 0.182 |
| 200 | 6.367 | 7.8 | 6.519 | 0.314 |
| 201 | 6.333 | 7.4 | 6.477 | 0.242 |
| 202 | 6.3 | 7.567 | 6.468 | 0.271 |
| 203 | 6.267 | 7.333 | 6.435 | 0.223 |
| 204 | 6.167 | 7.033 | 6.412 | 0.206 |
| 205 | 6.1 | 7.433 | 6.403 | 0.308 |
| 206 | 6.1 | 7.133 | 6.34 | 0.265 |
| 207 | 6.067 | 6.967 | 6.285 | 0.221 |
| 208 | 6.067 | 7.467 | 6.275 | 0.332 |
| 209 | 6.067 | 7.033 | 6.208 | 0.217 |
| 210 | 6.033 | 7.167 | 6.195 | 0.246 |
| 211 | 6.033 | 7.033 | 6.173 | 0.206 |
| 212 | 6.033 | 7.033 | 6.163 | 0.222 |
| 213 | 6.033 | 6.967 | 6.153 | 0.215 |
| 214 | 6.0 | 7.0 | 6.139 | 0.234 |
| 215 | 6.0 | 7.133 | 6.129 | 0.24 |
| 216 | 5.967 | 7.0 | 6.107 | 0.221 |
| 217 | 6.0 | 7.033 | 6.1 | 0.245 |
| 218 | 6.0 | 7.067 | 6.08 | 0.223 |
| 219 | 5.967 | 7.067 | 6.077 | 0.238 |
| 220 | 5.933 | 7.0 | 6.071 | 0.247 |
| 221 | 5.867 | 6.933 | 6.053 | 0.237 |
| 222 | 5.833 | 6.933 | 6.017 | 0.243 |
| 223 | 5.8 | 6.667 | 5.963 | 0.205 |
| 224 | 5.8 | 7.0 | 5.953 | 0.259 |
| 225 | 5.767 | 6.833 | 5.924 | 0.243 |
| 226 | 5.767 | 6.867 | 5.9 | 0.244 |
| 227 | 5.6 | 6.867 | 5.872 | 0.259 |
| 228 | 5.533 | 6.967 | 5.848 | 0.295 |
| 229 | 5.533 | 6.633 | 5.809 | 0.263 |
| 230 | 5.5 | 6.667 | 5.767 | 0.281 |
| 231 | 5.5 | 6.867 | 5.727 | 0.326 |
| 232 | 5.5 | 6.633 | 5.68 | 0.285 |
| 233 | 5.5 | 7.0 | 5.669 | 0.349 |
| 234 | 5.433 | 6.633 | 5.607 | 0.265 |
| 235 | 5.333 | 6.367 | 5.567 | 0.239 |
| 236 | 5.3 | 6.733 | 5.552 | 0.313 |
| 237 | 5.233 | 6.667 | 5.516 | 0.326 |
| 238 | 5.267 | 6.4 | 5.447 | 0.283 |
| 239 | 5.267 | 6.3 | 5.392 | 0.26 |
| 240 | 5.267 | 6.233 | 5.356 | 0.231 |
| 241 | 5.167 | 6.233 | 5.327 | 0.225 |
| 242 | 5.133 | 6.367 | 5.317 | 0.257 |
| 243 | 5.1 | 5.967 | 5.287 | 0.182 |
| 244 | 5.1 | 6.367 | 5.296 | 0.289 |
| 245 | 5.1 | 6.2 | 5.269 | 0.261 |
| 246 | 5.067 | 6.433 | 5.24 | 0.319 |
| 247 | 5.067 | 6.0 | 5.173 | 0.214 |
| 248 | 5.067 | 6.1 | 5.16 | 0.233 |
| 249 | 5.067 | 6.233 | 5.163 | 0.25 |
| 250 | 5.067 | 6.133 | 5.147 | 0.227 |
| 251 | 5.033 | 6.4 | 5.149 | 0.289 |
| 252 | 5.033 | 5.767 | 5.112 | 0.163 |
| 253 | 5.0 | 5.733 | 5.099 | 0.16 |
| 254 | 4.933 | 6.1 | 5.113 | 0.25 |
| 255 | 4.9 | 5.9 | 5.089 | 0.231 |
| 256 | 4.9 | 5.733 | 5.043 | 0.194 |
| 257 | 4.9 | 5.833 | 5.02 | 0.208 |
| 258 | 4.9 | 5.8 | 5.005 | 0.22 |
| 259 | 4.9 | 6.033 | 4.991 | 0.251 |
| 260 | 4.867 | 5.9 | 4.955 | 0.215 |
| 261 | 4.833 | 6.267 | 4.988 | 0.313 |
| 262 | 4.767 | 5.667 | 4.931 | 0.186 |
| 263 | 4.8 | 5.933 | 4.944 | 0.249 |
| 264 | 4.767 | 6.133 | 4.923 | 0.312 |
| 265 | 4.733 | 5.8 | 4.873 | 0.234 |
| 266 | 4.7 | 5.9 | 4.861 | 0.269 |
| 267 | 4.667 | 6.067 | 4.864 | 0.306 |
| 268 | 4.667 | 5.667 | 4.817 | 0.22 |
| 269 | 4.633 | 5.833 | 4.803 | 0.275 |
| 270 | 4.633 | 5.533 | 4.769 | 0.213 |
| 271 | 4.533 | 5.4 | 4.724 | 0.195 |
| 272 | 4.5 | 5.6 | 4.708 | 0.231 |
| 273 | 4.533 | 5.7 | 4.697 | 0.277 |
| 274 | 4.533 | 5.867 | 4.683 | 0.323 |
| 275 | 4.533 | 5.633 | 4.628 | 0.245 |
| 276 | 4.533 | 5.567 | 4.613 | 0.232 |
| 277 | 4.533 | 5.7 | 4.62 | 0.277 |
| 278 | 4.467 | 5.567 | 4.587 | 0.233 |
| 279 | 4.467 | 5.3 | 4.565 | 0.176 |
| 280 | 4.467 | 5.733 | 4.581 | 0.28 |
| 281 | 4.467 | 5.433 | 4.547 | 0.219 |
| 282 | 4.4 | 5.4 | 4.528 | 0.22 |
| 283 | 4.467 | 5.467 | 4.527 | 0.217 |
| 284 | 4.367 | 5.567 | 4.529 | 0.263 |
| 285 | 4.333 | 5.333 | 4.509 | 0.212 |
| 286 | 4.333 | 5.433 | 4.512 | 0.235 |
| 287 | 4.267 | 5.567 | 4.507 | 0.283 |
| 288 | 4.233 | 5.267 | 4.488 | 0.256 |
| 289 | 4.133 | 5.333 | 4.447 | 0.279 |
| 290 | 4.133 | 5.167 | 4.397 | 0.258 |
| 291 | 4.133 | 5.3 | 4.349 | 0.277 |
| 292 | 4.1 | 5.4 | 4.313 | 0.313 |
| 293 | 4.067 | 5.333 | 4.255 | 0.287 |
| 294 | 4.067 | 4.867 | 4.201 | 0.196 |
| 295 | 4.0 | 5.333 | 4.185 | 0.289 |
| 296 | 3.967 | 5.2 | 4.163 | 0.278 |
| 297 | 3.933 | 5.067 | 4.12 | 0.257 |
| 298 | 3.9 | 4.867 | 4.089 | 0.254 |
| 299 | 3.9 | 5.0 | 4.073 | 0.266 |
| 300 | 3.9 | 5.167 | 4.061 | 0.307 |
| 301 | 3.867 | 4.867 | 4.004 | 0.228 |
| 302 | 3.867 | 4.8 | 3.983 | 0.222 |
| 303 | 3.833 | 5.067 | 3.971 | 0.262 |
| 304 | 3.8 | 4.933 | 3.952 | 0.241 |
| 305 | 3.767 | 4.867 | 3.931 | 0.232 |
| 306 | 3.767 | 4.967 | 3.917 | 0.267 |
| 307 | 3.767 | 4.833 | 3.893 | 0.25 |
| 308 | 3.733 | 4.933 | 3.864 | 0.261 |
| 309 | 3.7 | 4.833 | 3.837 | 0.257 |
| 310 | 3.667 | 4.6 | 3.808 | 0.197 |
| 311 | 3.667 | 4.9 | 3.813 | 0.245 |
| 312 | 3.667 | 4.767 | 3.804 | 0.237 |
| 313 | 3.667 | 4.9 | 3.804 | 0.267 |
| 314 | 3.667 | 4.533 | 3.767 | 0.205 |
| 315 | 3.633 | 4.5 | 3.753 | 0.206 |
| 316 | 3.667 | 4.9 | 3.767 | 0.283 |
| 317 | 3.667 | 4.867 | 3.765 | 0.279 |
| 318 | 3.667 | 5.033 | 3.759 | 0.301 |
| 319 | 3.633 | 5.033 | 3.747 | 0.309 |
| 320 | 3.633 | 4.4 | 3.703 | 0.163 |
| 321 | 3.6 | 4.367 | 3.689 | 0.157 |
| 322 | 3.6 | 4.567 | 3.705 | 0.22 |
| 323 | 3.533 | 4.433 | 3.685 | 0.196 |
| 324 | 3.5 | 4.967 | 3.715 | 0.346 |
| 325 | 3.5 | 4.833 | 3.669 | 0.283 |
| 326 | 3.5 | 4.767 | 3.645 | 0.287 |
| 327 | 3.467 | 4.867 | 3.623 | 0.311 |
| 328 | 3.467 | 4.567 | 3.572 | 0.242 |
| 329 | 3.467 | 4.733 | 3.563 | 0.291 |
| 330 | 3.467 | 4.667 | 3.547 | 0.27 |
| 331 | 3.4 | 4.467 | 3.515 | 0.223 |
| 332 | 3.4 | 4.667 | 3.527 | 0.269 |
| 333 | 3.367 | 4.5 | 3.511 | 0.245 |
| 334 | 3.4 | 4.367 | 3.505 | 0.213 |
| 335 | 3.367 | 4.467 | 3.493 | 0.237 |
| 336 | 3.333 | 4.167 | 3.483 | 0.187 |
| 337 | 3.3 | 4.633 | 3.483 | 0.278 |
| 338 | 3.267 | 4.367 | 3.463 | 0.25 |
| 339 | 3.267 | 4.467 | 3.457 | 0.271 |
| 340 | 3.267 | 4.267 | 3.425 | 0.237 |
| 341 | 3.233 | 4.133 | 3.379 | 0.221 |
| 342 | 3.233 | 4.233 | 3.36 | 0.232 |
| 343 | 3.233 | 4.267 | 3.345 | 0.222 |
| 344 | 3.167 | 4.267 | 3.32 | 0.221 |
| 345 | 3.167 | 4.367 | 3.319 | 0.266 |
| 346 | 3.167 | 4.533 | 3.313 | 0.305 |
| 347 | 3.1 | 4.333 | 3.295 | 0.282 |
| 348 | 3.133 | 4.233 | 3.26 | 0.252 |
| 349 | 3.067 | 4.167 | 3.232 | 0.261 |
| 350 | 3.067 | 4.3 | 3.232 | 0.296 |
| 351 | 3.1 | 4.267 | 3.199 | 0.261 |
| 352 | 3.1 | 4.067 | 3.173 | 0.21 |
| 353 | 3.1 | 4.0 | 3.177 | 0.211 |
| 354 | 3.1 | 4.333 | 3.179 | 0.28 |
| 355 | 3.1 | 4.1 | 3.157 | 0.221 |
| 356 | 3.067 | 4.133 | 3.159 | 0.227 |
| 357 | 3.067 | 3.733 | 3.129 | 0.137 |
| 358 | 3.033 | 3.967 | 3.144 | 0.201 |
| 359 | 3.0 | 4.1 | 3.139 | 0.221 |
| 360 | 2.967 | 4.033 | 3.135 | 0.227 |
| 361 | 2.933 | 3.9 | 3.108 | 0.224 |
| 362 | 2.867 | 4.2 | 3.101 | 0.299 |
| 363 | 2.867 | 3.933 | 3.047 | 0.234 |
| 364 | 2.867 | 3.867 | 3.028 | 0.245 |
| 365 | 2.867 | 4.1 | 3.024 | 0.291 |
| 366 | 2.867 | 4.167 | 2.987 | 0.294 |
| 367 | 2.867 | 3.833 | 2.967 | 0.223 |
| 368 | 2.867 | 3.933 | 2.959 | 0.237 |
| 369 | 2.8 | 3.933 | 2.939 | 0.234 |
| 370 | 2.833 | 3.733 | 2.939 | 0.202 |
| 371 | 2.833 | 3.833 | 2.937 | 0.227 |
| 372 | 2.833 | 3.733 | 2.915 | 0.19 |
| 373 | 2.8 | 4.0 | 2.923 | 0.25 |
| 374 | 2.767 | 3.9 | 2.917 | 0.252 |
| 375 | 2.767 | 4.067 | 2.911 | 0.299 |
| 376 | 2.7 | 3.9 | 2.889 | 0.289 |
| 377 | 2.633 | 3.633 | 2.833 | 0.226 |
| 378 | 2.633 | 3.8 | 2.816 | 0.249 |
| 379 | 2.667 | 4.0 | 2.832 | 0.299 |
| 380 | 2.633 | 3.9 | 2.816 | 0.274 |
| 381 | 2.633 | 3.833 | 2.793 | 0.284 |
| 382 | 2.6 | 3.9 | 2.775 | 0.291 |
| 383 | 2.6 | 3.933 | 2.747 | 0.309 |
| 384 | 2.6 | 4.1 | 2.716 | 0.325 |
| 385 | 2.6 | 3.733 | 2.688 | 0.257 |
| 386 | 2.567 | 3.667 | 2.685 | 0.254 |
| 387 | 2.567 | 3.967 | 2.685 | 0.302 |
| 388 | 2.567 | 3.433 | 2.659 | 0.204 |
| 389 | 2.567 | 3.533 | 2.647 | 0.208 |
| 390 | 2.533 | 3.4 | 2.64 | 0.183 |
| 391 | 2.5 | 3.3 | 2.633 | 0.175 |
| 392 | 2.5 | 3.833 | 2.652 | 0.279 |
| 393 | 2.533 | 3.8 | 2.635 | 0.258 |
| 394 | 2.533 | 3.367 | 2.608 | 0.173 |
| 395 | 2.533 | 4.067 | 2.663 | 0.341 |
| 396 | 2.533 | 3.833 | 2.625 | 0.268 |
| 397 | 2.533 | 3.467 | 2.611 | 0.213 |
| 398 | 2.5 | 3.633 | 2.603 | 0.245 |
| 399 | 2.5 | 3.433 | 2.585 | 0.201 |
| 400 | 2.5 | 3.733 | 2.587 | 0.248 |
| 401 | 2.467 | 3.633 | 2.588 | 0.251 |
| 402 | 2.467 | 3.767 | 2.603 | 0.287 |
| 403 | 2.467 | 3.5 | 2.581 | 0.224 |
| 404 | 2.433 | 3.4 | 2.565 | 0.216 |
| 405 | 2.467 | 3.8 | 2.576 | 0.285 |
| 406 | 2.467 | 3.533 | 2.56 | 0.244 |
| 407 | 2.467 | 3.5 | 2.552 | 0.222 |
| 408 | 2.467 | 3.467 | 2.543 | 0.218 |
| 409 | 2.467 | 3.7 | 2.551 | 0.265 |
| 410 | 2.467 | 3.667 | 2.551 | 0.276 |
| 411 | 2.467 | 3.633 | 2.541 | 0.263 |
| 412 | 2.433 | 3.167 | 2.507 | 0.153 |
| 413 | 2.433 | 3.233 | 2.503 | 0.17 |
| 414 | 2.433 | 3.7 | 2.537 | 0.282 |
| 415 | 2.367 | 3.2 | 2.501 | 0.177 |
| 416 | 2.367 | 3.633 | 2.528 | 0.273 |
| 417 | 2.367 | 3.4 | 2.513 | 0.253 |
| 418 | 2.367 | 3.533 | 2.503 | 0.263 |
| 419 | 2.333 | 3.433 | 2.48 | 0.246 |
| 420 | 2.333 | 3.5 | 2.464 | 0.265 |
| 421 | 2.333 | 3.4 | 2.439 | 0.247 |
| 422 | 2.3 | 3.433 | 2.429 | 0.258 |
| 423 | 2.3 | 3.333 | 2.395 | 0.227 |
| 424 | 2.3 | 3.333 | 2.379 | 0.228 |
| 425 | 2.267 | 3.267 | 2.369 | 0.213 |
| 426 | 2.267 | 3.533 | 2.377 | 0.277 |
| 427 | 2.267 | 3.333 | 2.347 | 0.235 |
| 428 | 2.267 | 3.367 | 2.34 | 0.238 |
| 429 | 2.2 | 3.133 | 2.307 | 0.188 |
| 430 | 2.2 | 3.267 | 2.319 | 0.22 |
| 431 | 2.233 | 3.533 | 2.34 | 0.286 |
| 432 | 2.233 | 3.3 | 2.328 | 0.239 |
| 433 | 2.233 | 3.467 | 2.325 | 0.264 |
| 434 | 2.233 | 2.967 | 2.288 | 0.162 |
| 435 | 2.233 | 3.233 | 2.3 | 0.222 |
| 436 | 2.2 | 3.333 | 2.292 | 0.245 |
| 437 | 2.2 | 3.333 | 2.295 | 0.254 |
| 438 | 2.2 | 3.733 | 2.297 | 0.322 |
| 439 | 2.2 | 3.4 | 2.281 | 0.269 |
| 440 | 2.2 | 3.2 | 2.257 | 0.218 |
| 441 | 2.2 | 3.367 | 2.275 | 0.269 |
| 442 | 2.2 | 3.267 | 2.251 | 0.219 |
| 443 | 2.133 | 3.167 | 2.247 | 0.215 |
| 444 | 2.133 | 3.333 | 2.253 | 0.247 |
| 445 | 2.133 | 3.5 | 2.279 | 0.305 |
| 446 | 2.133 | 3.333 | 2.259 | 0.259 |
| 447 | 2.133 | 3.6 | 2.261 | 0.311 |
| 448 | 2.133 | 3.133 | 2.244 | 0.234 |
| 449 | 2.133 | 3.0 | 2.201 | 0.193 |
| 450 | 2.133 | 3.233 | 2.211 | 0.249 |
| 451 | 2.1 | 3.233 | 2.2 | 0.25 |
| 452 | 2.1 | 3.133 | 2.188 | 0.231 |
| 453 | 2.1 | 2.967 | 2.179 | 0.208 |
| 454 | 2.1 | 3.133 | 2.159 | 0.216 |
| 455 | 2.1 | 3.267 | 2.179 | 0.276 |
| 456 | 2.1 | 3.167 | 2.164 | 0.242 |
| 457 | 2.1 | 3.3 | 2.156 | 0.246 |
| 458 | 2.1 | 3.1 | 2.155 | 0.214 |
| 459 | 2.1 | 3.567 | 2.183 | 0.317 |
| 460 | 2.1 | 3.333 | 2.164 | 0.262 |
| 461 | 2.067 | 3.1 | 2.152 | 0.217 |
| 462 | 2.067 | 3.3 | 2.176 | 0.283 |
| 463 | 2.067 | 2.967 | 2.147 | 0.2 |
| 464 | 2.033 | 3.3 | 2.16 | 0.289 |
| 465 | 2.033 | 3.1 | 2.131 | 0.235 |
| 466 | 2.033 | 3.233 | 2.128 | 0.263 |
| 467 | 2.0 | 3.067 | 2.107 | 0.231 |
| 468 | 1.967 | 3.167 | 2.112 | 0.27 |
| 469 | 1.967 | 3.167 | 2.084 | 0.257 |
| 470 | 1.967 | 3.0 | 2.076 | 0.249 |
| 471 | 1.967 | 3.1 | 2.085 | 0.287 |
| 472 | 1.9 | 2.767 | 2.039 | 0.204 |
| 473 | 1.9 | 3.567 | 2.073 | 0.372 |
| 474 | 1.9 | 3.033 | 2.023 | 0.256 |
| 475 | 1.9 | 2.9 | 2.004 | 0.199 |
| 476 | 1.867 | 3.0 | 2.02 | 0.265 |
| 477 | 1.867 | 3.067 | 2.0 | 0.275 |
| 478 | 1.867 | 3.133 | 2.001 | 0.294 |
| 479 | 1.867 | 2.967 | 1.973 | 0.257 |
| 480 | 1.833 | 3.0 | 1.955 | 0.272 |
| 481 | 1.833 | 3.2 | 1.957 | 0.306 |
| 482 | 1.8 | 3.033 | 1.924 | 0.251 |
| 483 | 1.833 | 2.867 | 1.917 | 0.216 |
| 484 | 1.8 | 2.867 | 1.925 | 0.24 |
| 485 | 1.833 | 2.933 | 1.924 | 0.233 |
| 486 | 1.8 | 2.7 | 1.915 | 0.215 |
| 487 | 1.8 | 2.9 | 1.904 | 0.248 |
| 488 | 1.8 | 2.7 | 1.877 | 0.21 |
| 489 | 1.8 | 3.167 | 1.897 | 0.307 |
| 490 | 1.8 | 2.733 | 1.856 | 0.204 |
| 491 | 1.8 | 3.067 | 1.872 | 0.275 |
| 492 | 1.8 | 2.867 | 1.865 | 0.245 |
| 493 | 1.767 | 2.9 | 1.869 | 0.258 |
| 494 | 1.767 | 2.967 | 1.861 | 0.263 |
| 495 | 1.767 | 2.933 | 1.873 | 0.268 |
| 496 | 1.733 | 3.167 | 1.888 | 0.338 |
| 497 | 1.733 | 3.0 | 1.848 | 0.282 |
| 498 | 1.733 | 2.7 | 1.813 | 0.203 |
| 499 | 1.733 | 3.033 | 1.833 | 0.28 |
| 500 | 1.7 | 2.733 | 1.817 | 0.244 |

****

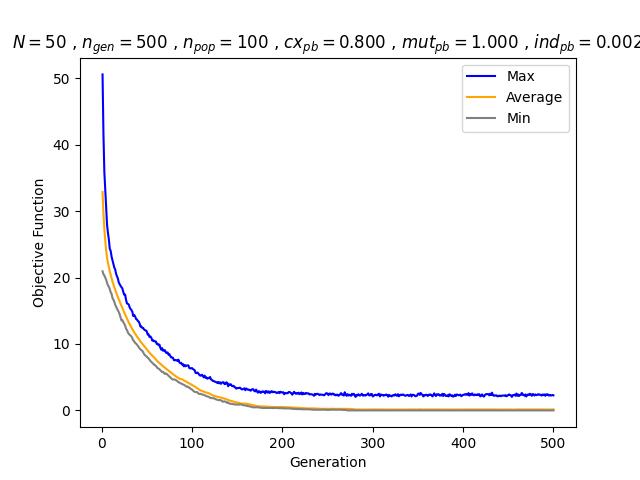
**SETTING 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Generation | Minimum Fitness | Maximum Fitness | Average Fitness | Standard deviation |
| 1 | 21.1 | 49.467 | 33.131 | 5.835 |
| 2 | 21.033 | 41.867 | 29.937 | 4.396 |
| 3 | 20.733 | 36.667 | 27.663 | 3.509 |
| 4 | 20.533 | 33.033 | 25.88 | 2.779 |
| 5 | 20.067 | 30.467 | 24.456 | 2.374 |
| 6 | 19.733 | 29.067 | 23.315 | 2.023 |
| 7 | 18.867 | 27.5 | 22.402 | 1.732 |
| 8 | 18.5 | 26.1 | 21.608 | 1.441 |
| 9 | 17.767 | 24.7 | 20.994 | 1.379 |
| 10 | 17.4 | 24.333 | 20.458 | 1.375 |
| 11 | 16.933 | 23.633 | 19.91 | 1.318 |
| 12 | 16.433 | 23.2 | 19.408 | 1.308 |
| 13 | 16.033 | 22.8 | 18.894 | 1.302 |
| 14 | 15.6 | 22.267 | 18.365 | 1.263 |
| 15 | 15.2 | 21.667 | 17.832 | 1.249 |
| 16 | 14.633 | 21.133 | 17.36 | 1.199 |
| 17 | 14.433 | 20.867 | 16.888 | 1.179 |
| 18 | 14.233 | 20.0 | 16.439 | 1.121 |
| 19 | 13.9 | 19.4 | 16.02 | 1.073 |
| 20 | 13.633 | 19.3 | 15.66 | 1.064 |
| 21 | 13.2 | 18.567 | 15.297 | 1.023 |
| 22 | 12.9 | 18.467 | 14.95 | 1.013 |
| 23 | 12.733 | 18.133 | 14.632 | 0.974 |
| 24 | 12.333 | 17.733 | 14.344 | 0.973 |
| 25 | 12.133 | 17.5 | 14.047 | 0.994 |
| 26 | 11.9 | 16.9 | 13.738 | 0.951 |
| 27 | 11.667 | 16.767 | 13.451 | 0.98 |
| 28 | 11.333 | 16.367 | 13.151 | 0.922 |
| 29 | 11.167 | 16.3 | 12.896 | 0.955 |
| 30 | 10.833 | 15.833 | 12.625 | 0.952 |
| 31 | 10.633 | 16.167 | 12.375 | 0.977 |
| 32 | 10.467 | 15.4 | 12.109 | 0.934 |
| 33 | 10.267 | 15.3 | 11.843 | 0.917 |
| 34 | 10.067 | 14.8 | 11.627 | 0.913 |
| 35 | 9.9 | 15.167 | 11.428 | 0.976 |
| 36 | 9.533 | 14.533 | 11.184 | 0.928 |
| 37 | 9.367 | 14.4 | 10.978 | 0.925 |
| 38 | 9.133 | 14.133 | 10.724 | 0.852 |
| 39 | 8.767 | 14.333 | 10.549 | 0.912 |
| 40 | 8.467 | 13.567 | 10.349 | 0.922 |
| 41 | 8.3 | 13.367 | 10.164 | 0.962 |
| 42 | 8.2 | 13.4 | 9.929 | 0.97 |
| 43 | 8.167 | 13.333 | 9.687 | 0.957 |
| 44 | 7.9 | 13.067 | 9.451 | 0.946 |
| 45 | 7.767 | 12.767 | 9.243 | 0.932 |
| 46 | 7.6 | 12.733 | 9.036 | 0.952 |
| 47 | 7.4 | 12.5 | 8.808 | 0.939 |
| 48 | 7.267 | 12.167 | 8.603 | 0.911 |
| 49 | 7.033 | 11.7 | 8.37 | 0.857 |
| 50 | 6.867 | 11.5 | 8.203 | 0.877 |
| 51 | 6.7 | 11.6 | 8.072 | 0.901 |
| 52 | 6.467 | 11.033 | 7.885 | 0.833 |
| 53 | 6.333 | 10.967 | 7.723 | 0.815 |
| 54 | 6.3 | 11.367 | 7.616 | 0.902 |
| 55 | 6.133 | 10.967 | 7.48 | 0.901 |
| 56 | 6.0 | 10.633 | 7.322 | 0.886 |
| 57 | 5.867 | 10.633 | 7.168 | 0.901 |
| 58 | 5.7 | 10.6 | 6.981 | 0.891 |
| 59 | 5.533 | 10.333 | 6.839 | 0.895 |
| 60 | 5.467 | 10.0 | 6.719 | 0.853 |
| 61 | 5.4 | 10.367 | 6.6 | 0.899 |
| 62 | 5.267 | 9.933 | 6.465 | 0.887 |
| 63 | 5.133 | 9.567 | 6.29 | 0.834 |
| 64 | 4.967 | 9.467 | 6.16 | 0.85 |
| 65 | 4.833 | 9.367 | 6.028 | 0.837 |
| 66 | 4.733 | 9.533 | 5.898 | 0.864 |
| 67 | 4.633 | 9.433 | 5.814 | 0.882 |
| 68 | 4.533 | 9.033 | 5.717 | 0.897 |
| 69 | 4.467 | 8.867 | 5.566 | 0.851 |
| 70 | 4.367 | 8.967 | 5.454 | 0.846 |
| 71 | 4.333 | 9.067 | 5.328 | 0.863 |
| 72 | 4.2 | 8.567 | 5.218 | 0.854 |
| 73 | 4.133 | 8.267 | 5.096 | 0.811 |
| 74 | 4.067 | 8.233 | 5.025 | 0.825 |
| 75 | 3.833 | 8.833 | 4.924 | 0.888 |
| 76 | 3.667 | 8.267 | 4.88 | 0.884 |
| 77 | 3.6 | 8.033 | 4.726 | 0.812 |
| 78 | 3.533 | 7.7 | 4.643 | 0.832 |
| 79 | 3.333 | 8.1 | 4.55 | 0.841 |
| 80 | 3.333 | 8.067 | 4.487 | 0.894 |
| 81 | 3.233 | 7.867 | 4.363 | 0.862 |
| 82 | 3.167 | 7.533 | 4.246 | 0.846 |
| 83 | 3.067 | 7.467 | 4.131 | 0.845 |
| 84 | 3.033 | 7.567 | 4.055 | 0.901 |
| 85 | 2.967 | 7.2 | 3.966 | 0.876 |
| 86 | 3.0 | 7.467 | 3.86 | 0.89 |
| 87 | 2.867 | 6.867 | 3.766 | 0.841 |
| 88 | 2.8 | 6.833 | 3.664 | 0.827 |
| 89 | 2.7 | 6.833 | 3.625 | 0.859 |
| 90 | 2.533 | 6.833 | 3.543 | 0.853 |
| 91 | 2.633 | 6.8 | 3.482 | 0.858 |
| 92 | 2.533 | 6.833 | 3.384 | 0.823 |
| 93 | 2.467 | 6.6 | 3.319 | 0.822 |
| 94 | 2.433 | 6.6 | 3.259 | 0.848 |
| 95 | 2.333 | 6.333 | 3.173 | 0.795 |
| 96 | 2.267 | 6.7 | 3.137 | 0.865 |
| 97 | 2.167 | 6.467 | 3.076 | 0.856 |
| 98 | 2.033 | 6.167 | 2.976 | 0.821 |
| 99 | 2.0 | 6.3 | 2.924 | 0.86 |
| 100 | 1.967 | 5.967 | 2.801 | 0.819 |
| 101 | 1.967 | 6.233 | 2.749 | 0.852 |
| 102 | 1.933 | 6.3 | 2.661 | 0.838 |
| 103 | 1.867 | 5.933 | 2.604 | 0.828 |
| 104 | 1.8 | 5.767 | 2.535 | 0.847 |
| 105 | 1.8 | 5.767 | 2.472 | 0.837 |
| 106 | 1.767 | 5.8 | 2.388 | 0.814 |
| 107 | 1.7 | 5.6 | 2.327 | 0.798 |
| 108 | 1.667 | 5.533 | 2.288 | 0.811 |
| 109 | 1.567 | 5.533 | 2.262 | 0.833 |
| 110 | 1.6 | 5.767 | 2.186 | 0.81 |
| 111 | 1.533 | 5.367 | 2.169 | 0.797 |
| 112 | 1.467 | 5.567 | 2.124 | 0.816 |
| 113 | 1.5 | 5.2 | 2.1 | 0.819 |
| 114 | 1.4 | 5.433 | 2.066 | 0.824 |
| 115 | 1.433 | 5.467 | 2.041 | 0.837 |
| 116 | 1.367 | 5.567 | 2.013 | 0.855 |
| 117 | 1.4 | 5.3 | 1.984 | 0.841 |
| 118 | 1.3 | 5.167 | 1.948 | 0.815 |
| 119 | 1.2 | 5.1 | 1.893 | 0.772 |
| 120 | 1.233 | 5.433 | 1.878 | 0.829 |
| 121 | 1.233 | 5.167 | 1.834 | 0.817 |
| 122 | 1.2 | 4.9 | 1.772 | 0.782 |
| 123 | 1.233 | 5.233 | 1.74 | 0.825 |
| 124 | 1.133 | 4.767 | 1.732 | 0.837 |
| 125 | 1.133 | 5.1 | 1.673 | 0.824 |
| 126 | 1.067 | 4.867 | 1.619 | 0.788 |
| 127 | 1.033 | 5.067 | 1.604 | 0.791 |
| 128 | 1.033 | 4.967 | 1.633 | 0.843 |
| 129 | 1.067 | 4.567 | 1.582 | 0.754 |
| 130 | 1.0 | 4.867 | 1.593 | 0.806 |
| 131 | 0.933 | 4.967 | 1.599 | 0.832 |
| 132 | 0.867 | 4.733 | 1.561 | 0.821 |
| 133 | 0.833 | 5.1 | 1.52 | 0.839 |
| 134 | 0.833 | 4.9 | 1.48 | 0.811 |
| 135 | 0.8 | 4.833 | 1.44 | 0.814 |
| 136 | 0.833 | 4.8 | 1.41 | 0.831 |
| 137 | 0.8 | 4.667 | 1.382 | 0.835 |
| 138 | 0.8 | 5.1 | 1.356 | 0.895 |
| 139 | 0.8 | 5.033 | 1.306 | 0.869 |
| 140 | 0.767 | 4.333 | 1.244 | 0.784 |
| 141 | 0.733 | 5.067 | 1.245 | 0.878 |
| 142 | 0.667 | 4.733 | 1.199 | 0.825 |
| 143 | 0.7 | 4.433 | 1.172 | 0.804 |
| 144 | 0.7 | 4.467 | 1.139 | 0.792 |
| 145 | 0.667 | 4.7 | 1.152 | 0.834 |
| 146 | 0.7 | 4.667 | 1.146 | 0.837 |
| 147 | 0.7 | 4.5 | 1.12 | 0.8 |
| 148 | 0.633 | 4.367 | 1.101 | 0.795 |
| 149 | 0.6 | 4.2 | 1.079 | 0.776 |
| 150 | 0.567 | 4.533 | 1.08 | 0.794 |
| 151 | 0.6 | 4.3 | 1.081 | 0.806 |
| 152 | 0.633 | 4.333 | 1.04 | 0.78 |
| 153 | 0.6 | 4.567 | 1.063 | 0.831 |
| 154 | 0.533 | 4.6 | 1.044 | 0.815 |
| 155 | 0.567 | 4.133 | 1.017 | 0.77 |
| 156 | 0.533 | 4.533 | 1.038 | 0.834 |
| 157 | 0.533 | 4.333 | 1.01 | 0.791 |
| 158 | 0.533 | 4.233 | 0.994 | 0.794 |
| 159 | 0.533 | 4.633 | 0.978 | 0.802 |
| 160 | 0.533 | 4.633 | 0.987 | 0.834 |
| 161 | 0.5 | 4.033 | 0.975 | 0.779 |
| 162 | 0.467 | 4.367 | 0.966 | 0.813 |
| 163 | 0.467 | 4.133 | 0.911 | 0.742 |
| 164 | 0.433 | 4.267 | 0.941 | 0.798 |
| 165 | 0.433 | 4.233 | 0.943 | 0.836 |
| 166 | 0.433 | 4.367 | 0.936 | 0.857 |
| 167 | 0.367 | 4.233 | 0.918 | 0.831 |
| 168 | 0.4 | 4.333 | 0.876 | 0.801 |
| 169 | 0.4 | 4.033 | 0.85 | 0.79 |
| 170 | 0.4 | 4.067 | 0.824 | 0.803 |
| 171 | 0.4 | 4.3 | 0.823 | 0.82 |
| 172 | 0.367 | 4.0 | 0.816 | 0.817 |
| 173 | 0.367 | 4.067 | 0.799 | 0.826 |
| 174 | 0.333 | 4.167 | 0.788 | 0.813 |
| 175 | 0.333 | 4.467 | 0.803 | 0.858 |
| 176 | 0.333 | 4.233 | 0.798 | 0.85 |
| 177 | 0.333 | 3.633 | 0.752 | 0.776 |
| 178 | 0.333 | 3.967 | 0.758 | 0.795 |
| 179 | 0.333 | 4.233 | 0.762 | 0.825 |
| 180 | 0.333 | 4.067 | 0.745 | 0.796 |
| 181 | 0.333 | 4.233 | 0.737 | 0.812 |
| 182 | 0.3 | 4.1 | 0.72 | 0.815 |
| 183 | 0.3 | 3.833 | 0.702 | 0.78 |
| 184 | 0.267 | 3.667 | 0.674 | 0.74 |
| 185 | 0.267 | 4.167 | 0.656 | 0.774 |
| 186 | 0.267 | 3.7 | 0.653 | 0.744 |
| 187 | 0.233 | 3.967 | 0.68 | 0.799 |
| 188 | 0.233 | 3.9 | 0.66 | 0.777 |
| 189 | 0.233 | 4.2 | 0.667 | 0.827 |
| 190 | 0.233 | 4.1 | 0.646 | 0.803 |
| 191 | 0.233 | 4.067 | 0.663 | 0.815 |
| 192 | 0.267 | 4.167 | 0.657 | 0.835 |
| 193 | 0.167 | 3.967 | 0.67 | 0.848 |
| 194 | 0.167 | 3.967 | 0.651 | 0.822 |
| 195 | 0.167 | 4.033 | 0.633 | 0.804 |
| 196 | 0.167 | 4.0 | 0.619 | 0.795 |
| 197 | 0.167 | 3.767 | 0.623 | 0.802 |
| 198 | 0.167 | 4.133 | 0.6 | 0.818 |
| 199 | 0.167 | 4.0 | 0.594 | 0.82 |
| 200 | 0.167 | 3.9 | 0.614 | 0.841 |
| 201 | 0.167 | 4.067 | 0.579 | 0.819 |
| 202 | 0.167 | 4.267 | 0.569 | 0.831 |
| 203 | 0.167 | 3.833 | 0.56 | 0.805 |
| 204 | 0.167 | 3.767 | 0.556 | 0.821 |
| 205 | 0.167 | 3.967 | 0.553 | 0.825 |
| 206 | 0.167 | 3.833 | 0.536 | 0.8 |
| 207 | 0.133 | 3.8 | 0.5 | 0.768 |
| 208 | 0.133 | 4.2 | 0.515 | 0.789 |
| 209 | 0.133 | 4.2 | 0.526 | 0.815 |
| 210 | 0.133 | 3.8 | 0.516 | 0.786 |
| 211 | 0.133 | 3.8 | 0.529 | 0.796 |
| 212 | 0.133 | 4.0 | 0.522 | 0.799 |
| 213 | 0.133 | 4.033 | 0.523 | 0.819 |
| 214 | 0.133 | 4.167 | 0.532 | 0.856 |
| 215 | 0.133 | 4.033 | 0.504 | 0.823 |
| 216 | 0.133 | 3.9 | 0.494 | 0.792 |
| 217 | 0.133 | 3.9 | 0.503 | 0.802 |
| 218 | 0.133 | 3.967 | 0.525 | 0.847 |
| 219 | 0.133 | 4.2 | 0.524 | 0.842 |
| 220 | 0.133 | 3.9 | 0.507 | 0.81 |
| 221 | 0.133 | 3.9 | 0.515 | 0.807 |
| 222 | 0.133 | 3.567 | 0.499 | 0.783 |
| 223 | 0.133 | 4.467 | 0.532 | 0.878 |
| 224 | 0.133 | 4.067 | 0.521 | 0.838 |
| 225 | 0.133 | 4.467 | 0.525 | 0.862 |
| 226 | 0.133 | 4.033 | 0.529 | 0.832 |
| 227 | 0.133 | 4.1 | 0.508 | 0.838 |
| 228 | 0.133 | 3.567 | 0.459 | 0.746 |
| 229 | 0.133 | 3.533 | 0.497 | 0.766 |
| 230 | 0.133 | 4.533 | 0.552 | 0.891 |
| 231 | 0.1 | 4.367 | 0.511 | 0.847 |
| 232 | 0.1 | 4.333 | 0.508 | 0.844 |
| 233 | 0.1 | 3.867 | 0.526 | 0.828 |
| 234 | 0.1 | 3.867 | 0.48 | 0.779 |
| 235 | 0.1 | 3.667 | 0.491 | 0.777 |
| 236 | 0.1 | 4.2 | 0.506 | 0.832 |
| 237 | 0.1 | 3.967 | 0.492 | 0.785 |
| 238 | 0.1 | 3.933 | 0.507 | 0.821 |
| 239 | 0.1 | 3.433 | 0.482 | 0.76 |
| 240 | 0.1 | 3.933 | 0.509 | 0.83 |
| 241 | 0.1 | 4.0 | 0.514 | 0.846 |
| 242 | 0.1 | 3.833 | 0.485 | 0.797 |
| 243 | 0.1 | 4.1 | 0.498 | 0.847 |
| 244 | 0.1 | 4.2 | 0.511 | 0.858 |
| 245 | 0.1 | 3.9 | 0.486 | 0.821 |
| 246 | 0.1 | 3.9 | 0.466 | 0.802 |
| 247 | 0.1 | 3.9 | 0.47 | 0.797 |
| 248 | 0.1 | 3.667 | 0.482 | 0.809 |
| 249 | 0.1 | 3.533 | 0.478 | 0.792 |
| 250 | 0.1 | 4.033 | 0.484 | 0.812 |
| 251 | 0.1 | 3.833 | 0.452 | 0.795 |
| 252 | 0.1 | 3.933 | 0.463 | 0.794 |
| 253 | 0.1 | 4.067 | 0.465 | 0.825 |
| 254 | 0.1 | 3.633 | 0.494 | 0.827 |
| 255 | 0.1 | 4.267 | 0.484 | 0.836 |
| 256 | 0.1 | 3.933 | 0.489 | 0.81 |
| 257 | 0.1 | 3.333 | 0.465 | 0.763 |
| 258 | 0.1 | 3.833 | 0.49 | 0.822 |
| 259 | 0.1 | 3.633 | 0.481 | 0.793 |
| 260 | 0.1 | 3.967 | 0.476 | 0.817 |
| 261 | 0.1 | 3.833 | 0.465 | 0.798 |
| 262 | 0.1 | 3.933 | 0.468 | 0.815 |
| 263 | 0.1 | 3.667 | 0.448 | 0.768 |
| 264 | 0.1 | 4.033 | 0.479 | 0.835 |
| 265 | 0.1 | 3.967 | 0.472 | 0.809 |
| 266 | 0.1 | 4.4 | 0.512 | 0.882 |
| 267 | 0.1 | 3.667 | 0.488 | 0.808 |
| 268 | 0.067 | 4.2 | 0.52 | 0.878 |
| 269 | 0.067 | 3.767 | 0.466 | 0.795 |
| 270 | 0.1 | 3.867 | 0.462 | 0.804 |
| 271 | 0.1 | 3.667 | 0.483 | 0.805 |
| 272 | 0.1 | 3.7 | 0.463 | 0.8 |
| 273 | 0.1 | 4.467 | 0.482 | 0.851 |
| 274 | 0.1 | 3.533 | 0.466 | 0.774 |
| 275 | 0.1 | 3.833 | 0.484 | 0.826 |
| 276 | 0.1 | 3.733 | 0.465 | 0.784 |
| 277 | 0.1 | 4.233 | 0.483 | 0.843 |
| 278 | 0.1 | 3.733 | 0.466 | 0.778 |
| 279 | 0.1 | 3.7 | 0.475 | 0.788 |
| 280 | 0.1 | 3.9 | 0.485 | 0.808 |
| 281 | 0.1 | 4.067 | 0.496 | 0.834 |
| 282 | 0.1 | 3.8 | 0.476 | 0.803 |
| 283 | 0.1 | 3.533 | 0.468 | 0.771 |
| 284 | 0.1 | 4.133 | 0.519 | 0.86 |
| 285 | 0.1 | 3.933 | 0.469 | 0.795 |
| 286 | 0.1 | 3.767 | 0.465 | 0.793 |
| 287 | 0.1 | 3.633 | 0.441 | 0.77 |
| 288 | 0.1 | 3.667 | 0.46 | 0.781 |
| 289 | 0.1 | 3.467 | 0.443 | 0.763 |
| 290 | 0.1 | 3.567 | 0.45 | 0.767 |
| 291 | 0.1 | 3.6 | 0.454 | 0.758 |
| 292 | 0.1 | 3.9 | 0.452 | 0.787 |
| 293 | 0.1 | 3.767 | 0.46 | 0.779 |
| 294 | 0.1 | 3.667 | 0.461 | 0.779 |
| 295 | 0.1 | 3.8 | 0.484 | 0.815 |
| 296 | 0.1 | 3.9 | 0.48 | 0.822 |
| 297 | 0.1 | 3.967 | 0.471 | 0.829 |
| 298 | 0.1 | 3.867 | 0.482 | 0.826 |
| 299 | 0.1 | 3.833 | 0.451 | 0.788 |
| 300 | 0.1 | 3.667 | 0.462 | 0.79 |
| 301 | 0.1 | 4.133 | 0.471 | 0.829 |
| 302 | 0.1 | 4.0 | 0.45 | 0.808 |
| 303 | 0.1 | 3.9 | 0.429 | 0.773 |
| 304 | 0.1 | 3.9 | 0.439 | 0.775 |
| 305 | 0.067 | 4.067 | 0.454 | 0.803 |
| 306 | 0.1 | 3.667 | 0.449 | 0.779 |
| 307 | 0.1 | 3.9 | 0.476 | 0.816 |
| 308 | 0.1 | 4.1 | 0.489 | 0.855 |
| 309 | 0.1 | 3.933 | 0.466 | 0.815 |
| 310 | 0.1 | 4.033 | 0.48 | 0.812 |
| 311 | 0.1 | 3.7 | 0.459 | 0.766 |
| 312 | 0.1 | 3.733 | 0.428 | 0.754 |
| 313 | 0.1 | 4.067 | 0.481 | 0.832 |
| 314 | 0.067 | 3.733 | 0.494 | 0.82 |
| 315 | 0.067 | 3.833 | 0.49 | 0.808 |
| 316 | 0.067 | 4.367 | 0.47 | 0.832 |
| 317 | 0.067 | 3.467 | 0.442 | 0.753 |
| 318 | 0.067 | 3.967 | 0.476 | 0.819 |
| 319 | 0.067 | 3.967 | 0.48 | 0.832 |
| 320 | 0.067 | 3.833 | 0.467 | 0.81 |
| 321 | 0.067 | 3.633 | 0.435 | 0.766 |
| 322 | 0.067 | 3.833 | 0.458 | 0.824 |
| 323 | 0.067 | 3.833 | 0.461 | 0.815 |
| 324 | 0.067 | 3.7 | 0.435 | 0.78 |
| 325 | 0.067 | 3.733 | 0.439 | 0.801 |
| 326 | 0.067 | 3.833 | 0.426 | 0.794 |
| 327 | 0.067 | 3.8 | 0.444 | 0.822 |
| 328 | 0.067 | 4.133 | 0.476 | 0.861 |
| 329 | 0.067 | 3.733 | 0.433 | 0.796 |
| 330 | 0.067 | 3.6 | 0.451 | 0.793 |
| 331 | 0.067 | 4.233 | 0.461 | 0.855 |
| 332 | 0.067 | 4.0 | 0.439 | 0.813 |
| 333 | 0.067 | 3.9 | 0.465 | 0.832 |
| 334 | 0.067 | 3.867 | 0.452 | 0.818 |
| 335 | 0.067 | 4.033 | 0.438 | 0.81 |
| 336 | 0.067 | 3.633 | 0.44 | 0.795 |
| 337 | 0.067 | 4.2 | 0.471 | 0.865 |
| 338 | 0.067 | 3.533 | 0.43 | 0.792 |
| 339 | 0.033 | 3.433 | 0.399 | 0.744 |
| 340 | 0.067 | 4.267 | 0.46 | 0.855 |
| 341 | 0.067 | 3.733 | 0.422 | 0.785 |
| 342 | 0.033 | 4.067 | 0.428 | 0.815 |
| 343 | 0.033 | 3.5 | 0.422 | 0.773 |
| 344 | 0.033 | 3.8 | 0.443 | 0.81 |
| 345 | 0.033 | 3.8 | 0.443 | 0.806 |
| 346 | 0.033 | 3.6 | 0.438 | 0.807 |
| 347 | 0.033 | 3.4 | 0.412 | 0.762 |
| 348 | 0.033 | 3.9 | 0.442 | 0.823 |
| 349 | 0.033 | 3.367 | 0.406 | 0.765 |
| 350 | 0.033 | 4.1 | 0.421 | 0.842 |
| 351 | 0.033 | 3.767 | 0.425 | 0.812 |
| 352 | 0.033 | 3.733 | 0.43 | 0.814 |
| 353 | 0.033 | 3.867 | 0.407 | 0.798 |
| 354 | 0.033 | 3.433 | 0.396 | 0.764 |
| 355 | 0.033 | 3.7 | 0.432 | 0.807 |
| 356 | 0.033 | 4.033 | 0.462 | 0.854 |
| 357 | 0.033 | 3.8 | 0.412 | 0.803 |
| 358 | 0.033 | 3.567 | 0.378 | 0.762 |
| 359 | 0.033 | 3.667 | 0.405 | 0.795 |
| 360 | 0.033 | 3.933 | 0.43 | 0.841 |
| 361 | 0.033 | 4.033 | 0.412 | 0.824 |
| 362 | 0.033 | 4.067 | 0.42 | 0.835 |
| 363 | 0.033 | 3.7 | 0.415 | 0.806 |
| 364 | 0.033 | 3.867 | 0.397 | 0.788 |
| 365 | 0.033 | 3.567 | 0.429 | 0.811 |
| 366 | 0.033 | 3.733 | 0.437 | 0.827 |
| 367 | 0.033 | 3.867 | 0.441 | 0.838 |
| 368 | 0.033 | 4.1 | 0.459 | 0.877 |
| 369 | 0.033 | 4.033 | 0.438 | 0.859 |
| 370 | 0.033 | 3.533 | 0.424 | 0.825 |
| 371 | 0.033 | 4.2 | 0.406 | 0.83 |
| 372 | 0.033 | 3.867 | 0.393 | 0.795 |
| 373 | 0.033 | 3.767 | 0.395 | 0.78 |
| 374 | 0.033 | 4.067 | 0.432 | 0.835 |
| 375 | 0.033 | 3.8 | 0.44 | 0.838 |
| 376 | 0.033 | 4.333 | 0.43 | 0.88 |
| 377 | 0.033 | 3.867 | 0.404 | 0.809 |
| 378 | 0.033 | 4.1 | 0.42 | 0.84 |
| 379 | 0.033 | 3.9 | 0.427 | 0.846 |
| 380 | 0.033 | 3.6 | 0.385 | 0.759 |
| 381 | 0.033 | 3.8 | 0.411 | 0.81 |
| 382 | 0.033 | 3.633 | 0.395 | 0.78 |
| 383 | 0.033 | 3.733 | 0.384 | 0.768 |
| 384 | 0.033 | 4.067 | 0.422 | 0.842 |
| 385 | 0.033 | 3.9 | 0.424 | 0.823 |
| 386 | 0.033 | 3.833 | 0.415 | 0.813 |
| 387 | 0.033 | 3.867 | 0.427 | 0.841 |
| 388 | 0.033 | 3.833 | 0.402 | 0.794 |
| 389 | 0.033 | 3.367 | 0.385 | 0.752 |
| 390 | 0.033 | 3.933 | 0.404 | 0.823 |
| 391 | 0.033 | 3.967 | 0.41 | 0.831 |
| 392 | 0.033 | 3.7 | 0.396 | 0.795 |
| 393 | 0.033 | 3.9 | 0.434 | 0.839 |
| 394 | 0.033 | 3.567 | 0.427 | 0.798 |
| 395 | 0.033 | 3.533 | 0.415 | 0.785 |
| 396 | 0.033 | 3.767 | 0.423 | 0.803 |
| 397 | 0.033 | 3.733 | 0.427 | 0.806 |
| 398 | 0.033 | 4.1 | 0.392 | 0.808 |
| 399 | 0.033 | 3.767 | 0.408 | 0.806 |
| 400 | 0.033 | 3.933 | 0.417 | 0.822 |
| 401 | 0.033 | 3.9 | 0.4 | 0.804 |
| 402 | 0.033 | 3.833 | 0.411 | 0.813 |
| 403 | 0.033 | 3.8 | 0.437 | 0.839 |
| 404 | 0.033 | 3.867 | 0.423 | 0.838 |
| 405 | 0.033 | 3.833 | 0.395 | 0.795 |
| 406 | 0.033 | 3.733 | 0.396 | 0.79 |
| 407 | 0.033 | 3.867 | 0.416 | 0.818 |
| 408 | 0.033 | 3.633 | 0.404 | 0.789 |
| 409 | 0.033 | 3.7 | 0.402 | 0.788 |
| 410 | 0.033 | 3.367 | 0.387 | 0.75 |
| 411 | 0.033 | 3.733 | 0.372 | 0.771 |
| 412 | 0.033 | 3.567 | 0.388 | 0.763 |
| 413 | 0.033 | 3.9 | 0.398 | 0.798 |
| 414 | 0.033 | 3.6 | 0.418 | 0.8 |
| 415 | 0.033 | 3.833 | 0.401 | 0.812 |
| 416 | 0.033 | 3.9 | 0.405 | 0.828 |
| 417 | 0.033 | 3.767 | 0.416 | 0.816 |
| 418 | 0.033 | 4.1 | 0.418 | 0.836 |
| 419 | 0.033 | 4.167 | 0.416 | 0.847 |
| 420 | 0.033 | 3.8 | 0.437 | 0.84 |
| 421 | 0.033 | 3.7 | 0.418 | 0.815 |
| 422 | 0.033 | 4.0 | 0.425 | 0.853 |
| 423 | 0.033 | 3.7 | 0.408 | 0.806 |
| 424 | 0.033 | 3.733 | 0.396 | 0.79 |
| 425 | 0.033 | 3.767 | 0.39 | 0.785 |
| 426 | 0.033 | 3.533 | 0.37 | 0.752 |
| 427 | 0.033 | 3.5 | 0.401 | 0.785 |
| 428 | 0.033 | 3.8 | 0.43 | 0.83 |
| 429 | 0.033 | 3.5 | 0.397 | 0.794 |
| 430 | 0.033 | 3.833 | 0.386 | 0.778 |
| 431 | 0.033 | 3.8 | 0.404 | 0.802 |
| 432 | 0.033 | 3.6 | 0.375 | 0.768 |
| 433 | 0.033 | 3.467 | 0.386 | 0.765 |
| 434 | 0.033 | 3.633 | 0.436 | 0.816 |
| 435 | 0.033 | 3.967 | 0.436 | 0.854 |
| 436 | 0.033 | 3.933 | 0.412 | 0.824 |
| 437 | 0.033 | 3.567 | 0.42 | 0.799 |
| 438 | 0.033 | 3.533 | 0.407 | 0.781 |
| 439 | 0.033 | 3.633 | 0.404 | 0.791 |
| 440 | 0.033 | 3.7 | 0.392 | 0.786 |
| 441 | 0.033 | 3.667 | 0.436 | 0.819 |
| 442 | 0.033 | 3.767 | 0.404 | 0.8 |
| 443 | 0.033 | 3.533 | 0.398 | 0.785 |
| 444 | 0.033 | 4.067 | 0.399 | 0.823 |
| 445 | 0.033 | 3.633 | 0.397 | 0.794 |
| 446 | 0.033 | 4.033 | 0.414 | 0.827 |
| 447 | 0.033 | 3.7 | 0.392 | 0.792 |
| 448 | 0.033 | 3.867 | 0.405 | 0.811 |
| 449 | 0.033 | 3.733 | 0.412 | 0.805 |
| 450 | 0.033 | 3.833 | 0.407 | 0.807 |
| 451 | 0.033 | 3.6 | 0.42 | 0.805 |
| 452 | 0.033 | 3.767 | 0.41 | 0.812 |
| 453 | 0.033 | 3.533 | 0.432 | 0.809 |
| 454 | 0.033 | 3.867 | 0.422 | 0.832 |
| 455 | 0.033 | 3.667 | 0.422 | 0.799 |
| 456 | 0.033 | 3.9 | 0.434 | 0.839 |
| 457 | 0.033 | 3.633 | 0.409 | 0.792 |
| 458 | 0.033 | 3.4 | 0.391 | 0.76 |
| 459 | 0.033 | 3.767 | 0.411 | 0.801 |
| 460 | 0.033 | 4.133 | 0.429 | 0.838 |
| 461 | 0.033 | 3.667 | 0.4 | 0.777 |
| 462 | 0.033 | 3.567 | 0.425 | 0.79 |
| 463 | 0.033 | 3.9 | 0.442 | 0.838 |
| 464 | 0.033 | 3.933 | 0.403 | 0.807 |
| 465 | 0.033 | 3.467 | 0.383 | 0.763 |
| 466 | 0.033 | 3.633 | 0.394 | 0.776 |
| 467 | 0.033 | 3.733 | 0.392 | 0.795 |
| 468 | 0.033 | 4.167 | 0.438 | 0.856 |
| 469 | 0.033 | 3.4 | 0.412 | 0.773 |
| 470 | 0.033 | 3.967 | 0.416 | 0.82 |
| 471 | 0.033 | 3.5 | 0.43 | 0.8 |
| 472 | 0.033 | 3.8 | 0.432 | 0.815 |
| 473 | 0.033 | 4.1 | 0.431 | 0.852 |
| 474 | 0.033 | 3.567 | 0.401 | 0.779 |
| 475 | 0.033 | 3.967 | 0.412 | 0.825 |
| 476 | 0.033 | 4.067 | 0.412 | 0.829 |
| 477 | 0.033 | 3.733 | 0.421 | 0.815 |
| 478 | 0.033 | 3.667 | 0.42 | 0.813 |
| 479 | 0.033 | 3.8 | 0.416 | 0.808 |
| 480 | 0.033 | 3.667 | 0.407 | 0.795 |
| 481 | 0.033 | 4.1 | 0.41 | 0.827 |
| 482 | 0.033 | 3.633 | 0.428 | 0.813 |
| 483 | 0.033 | 3.667 | 0.431 | 0.816 |
| 484 | 0.033 | 3.633 | 0.402 | 0.776 |
| 485 | 0.033 | 3.7 | 0.394 | 0.794 |
| 486 | 0.033 | 3.433 | 0.399 | 0.78 |
| 487 | 0.033 | 3.633 | 0.395 | 0.787 |
| 488 | 0.033 | 3.8 | 0.412 | 0.81 |
| 489 | 0.033 | 3.933 | 0.394 | 0.804 |
| 490 | 0.0 | 3.667 | 0.394 | 0.803 |
| 491 | 0.0 | 3.733 | 0.408 | 0.806 |
| 492 | 0.0 | 3.733 | 0.399 | 0.802 |
| 493 | 0.033 | 4.0 | 0.42 | 0.834 |
| 494 | 0.033 | 3.5 | 0.408 | 0.787 |
| 495 | 0.033 | 3.967 | 0.419 | 0.822 |
| 496 | 0.0 | 3.9 | 0.384 | 0.799 |
| 497 | 0.033 | 3.867 | 0.394 | 0.792 |
| 498 | 0.033 | 3.4 | 0.408 | 0.782 |
| 499 | 0.0 | 4.067 | 0.428 | 0.846 |
| 500 | 0.0 | 3.7 | 0.414 | 0.814 |

****

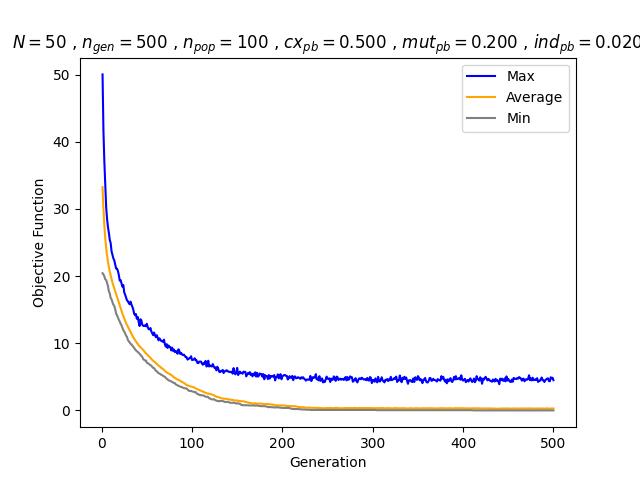
**SETTING 4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Generation | Minimum Fitness | Maximum Fitness | Average Fitness | Standard deviation |
| 1 | 20.933 | 50.567 | 32.873 | 5.783 |
| 2 | 20.5 | 41.567 | 29.602 | 4.316 |
| 3 | 20.3 | 35.867 | 27.337 | 3.435 |
| 4 | 20.0 | 33.133 | 25.53 | 2.875 |
| 5 | 19.667 | 30.267 | 24.024 | 2.271 |
| 6 | 19.2 | 27.9 | 22.957 | 1.848 |
| 7 | 18.8 | 26.7 | 22.171 | 1.556 |
| 8 | 18.6 | 25.7 | 21.55 | 1.364 |
| 9 | 18.267 | 24.333 | 20.935 | 1.225 |
| 10 | 17.767 | 24.0 | 20.42 | 1.185 |
| 11 | 17.533 | 23.133 | 19.865 | 1.08 |
| 12 | 16.9 | 22.6 | 19.398 | 1.044 |
| 13 | 16.667 | 22.0 | 18.943 | 0.979 |
| 14 | 16.367 | 21.5 | 18.529 | 0.93 |
| 15 | 15.9 | 21.2 | 18.125 | 0.909 |
| 16 | 15.6 | 20.567 | 17.761 | 0.878 |
| 17 | 15.3 | 20.167 | 17.396 | 0.872 |
| 18 | 15.033 | 19.833 | 17.055 | 0.851 |
| 19 | 14.8 | 19.233 | 16.708 | 0.824 |
| 20 | 14.433 | 18.967 | 16.376 | 0.83 |
| 21 | 14.0 | 18.733 | 16.028 | 0.829 |
| 22 | 13.533 | 18.533 | 15.696 | 0.826 |
| 23 | 13.567 | 18.333 | 15.374 | 0.824 |
| 24 | 13.267 | 17.8 | 15.052 | 0.792 |
| 25 | 13.033 | 17.4 | 14.738 | 0.787 |
| 26 | 12.767 | 17.433 | 14.429 | 0.81 |
| 27 | 12.3 | 16.633 | 14.113 | 0.767 |
| 28 | 12.1 | 16.1 | 13.786 | 0.728 |
| 29 | 11.733 | 16.033 | 13.489 | 0.745 |
| 30 | 11.533 | 15.933 | 13.229 | 0.743 |
| 31 | 11.367 | 15.5 | 12.958 | 0.705 |
| 32 | 11.267 | 15.267 | 12.73 | 0.725 |
| 33 | 11.133 | 15.1 | 12.472 | 0.715 |
| 34 | 10.833 | 14.833 | 12.211 | 0.696 |
| 35 | 10.533 | 14.2 | 11.981 | 0.649 |
| 36 | 10.4 | 14.367 | 11.752 | 0.658 |
| 37 | 10.167 | 14.167 | 11.54 | 0.659 |
| 38 | 10.067 | 13.767 | 11.334 | 0.618 |
| 39 | 9.9 | 13.7 | 11.146 | 0.633 |
| 40 | 9.733 | 13.467 | 10.956 | 0.645 |
| 41 | 9.533 | 13.367 | 10.749 | 0.632 |
| 42 | 9.333 | 13.067 | 10.545 | 0.621 |
| 43 | 9.167 | 12.6 | 10.352 | 0.607 |
| 44 | 9.067 | 12.633 | 10.192 | 0.594 |
| 45 | 8.967 | 12.4 | 10.029 | 0.593 |
| 46 | 8.733 | 12.4 | 9.864 | 0.6 |
| 47 | 8.467 | 12.167 | 9.7 | 0.609 |
| 48 | 8.3 | 12.067 | 9.519 | 0.621 |
| 49 | 8.2 | 12.033 | 9.365 | 0.632 |
| 50 | 8.067 | 11.867 | 9.182 | 0.615 |
| 51 | 7.933 | 11.4 | 9.013 | 0.596 |
| 52 | 7.8 | 11.433 | 8.871 | 0.626 |
| 53 | 7.633 | 11.033 | 8.689 | 0.581 |
| 54 | 7.433 | 11.133 | 8.522 | 0.58 |
| 55 | 7.3 | 10.933 | 8.385 | 0.591 |
| 56 | 7.167 | 10.5 | 8.257 | 0.562 |
| 57 | 7.033 | 10.567 | 8.119 | 0.563 |
| 58 | 6.867 | 10.4 | 7.981 | 0.573 |
| 59 | 6.833 | 10.4 | 7.831 | 0.609 |
| 60 | 6.667 | 10.367 | 7.672 | 0.621 |
| 61 | 6.533 | 10.0 | 7.508 | 0.588 |
| 62 | 6.333 | 10.033 | 7.365 | 0.587 |
| 63 | 6.3 | 9.8 | 7.248 | 0.567 |
| 64 | 6.2 | 9.9 | 7.117 | 0.578 |
| 65 | 6.033 | 9.4 | 6.997 | 0.561 |
| 66 | 5.9 | 9.133 | 6.875 | 0.55 |
| 67 | 5.767 | 9.367 | 6.772 | 0.584 |
| 68 | 5.8 | 8.967 | 6.645 | 0.542 |
| 69 | 5.6 | 9.033 | 6.518 | 0.551 |
| 70 | 5.5 | 9.067 | 6.43 | 0.581 |
| 71 | 5.567 | 8.733 | 6.319 | 0.566 |
| 72 | 5.467 | 8.633 | 6.201 | 0.554 |
| 73 | 5.367 | 8.733 | 6.087 | 0.568 |
| 74 | 5.2 | 8.367 | 5.973 | 0.549 |
| 75 | 5.1 | 8.467 | 5.879 | 0.567 |
| 76 | 4.967 | 8.167 | 5.779 | 0.557 |
| 77 | 4.833 | 7.967 | 5.661 | 0.525 |
| 78 | 4.7 | 7.967 | 5.566 | 0.552 |
| 79 | 4.633 | 7.9 | 5.465 | 0.556 |
| 80 | 4.667 | 7.567 | 5.343 | 0.523 |
| 81 | 4.633 | 7.533 | 5.252 | 0.542 |
| 82 | 4.567 | 7.6 | 5.151 | 0.555 |
| 83 | 4.5 | 7.533 | 5.042 | 0.525 |
| 84 | 4.367 | 7.433 | 4.958 | 0.539 |
| 85 | 4.233 | 7.633 | 4.879 | 0.548 |
| 86 | 4.2 | 7.233 | 4.801 | 0.482 |
| 87 | 4.1 | 7.1 | 4.757 | 0.476 |
| 88 | 4.067 | 7.167 | 4.726 | 0.507 |
| 89 | 3.967 | 6.9 | 4.669 | 0.499 |
| 90 | 3.9 | 6.967 | 4.616 | 0.511 |
| 91 | 3.867 | 6.633 | 4.521 | 0.486 |
| 92 | 3.767 | 6.833 | 4.46 | 0.529 |
| 93 | 3.667 | 6.633 | 4.364 | 0.516 |
| 94 | 3.567 | 6.767 | 4.285 | 0.537 |
| 95 | 3.6 | 6.767 | 4.207 | 0.522 |
| 96 | 3.467 | 6.767 | 4.141 | 0.555 |
| 97 | 3.467 | 6.367 | 4.052 | 0.536 |
| 98 | 3.3 | 6.333 | 3.974 | 0.541 |
| 99 | 3.2 | 6.333 | 3.881 | 0.501 |
| 100 | 3.133 | 6.367 | 3.828 | 0.535 |
| 101 | 3.0 | 6.233 | 3.748 | 0.521 |
| 102 | 2.867 | 6.133 | 3.682 | 0.527 |
| 103 | 2.8 | 6.033 | 3.61 | 0.539 |
| 104 | 2.767 | 5.633 | 3.504 | 0.516 |
| 105 | 2.733 | 5.6 | 3.41 | 0.523 |
| 106 | 2.733 | 5.7 | 3.318 | 0.531 |
| 107 | 2.567 | 5.567 | 3.23 | 0.544 |
| 108 | 2.467 | 5.367 | 3.112 | 0.503 |
| 109 | 2.467 | 5.233 | 3.028 | 0.489 |
| 110 | 2.5 | 5.233 | 2.974 | 0.514 |
| 111 | 2.4 | 5.367 | 2.924 | 0.523 |
| 112 | 2.367 | 5.2 | 2.868 | 0.495 |
| 113 | 2.333 | 4.967 | 2.799 | 0.458 |
| 114 | 2.267 | 5.233 | 2.772 | 0.494 |
| 115 | 2.233 | 4.9 | 2.716 | 0.457 |
| 116 | 2.133 | 4.967 | 2.69 | 0.479 |
| 117 | 2.1 | 4.767 | 2.651 | 0.481 |
| 118 | 2.067 | 4.9 | 2.609 | 0.523 |
| 119 | 2.0 | 4.833 | 2.552 | 0.542 |
| 120 | 1.9 | 5.033 | 2.489 | 0.547 |
| 121 | 1.867 | 4.667 | 2.398 | 0.501 |
| 122 | 1.867 | 4.6 | 2.338 | 0.507 |
| 123 | 1.833 | 4.433 | 2.255 | 0.464 |
| 124 | 1.833 | 4.433 | 2.221 | 0.508 |
| 125 | 1.767 | 4.333 | 2.171 | 0.493 |
| 126 | 1.7 | 4.3 | 2.13 | 0.482 |
| 127 | 1.633 | 4.233 | 2.09 | 0.474 |
| 128 | 1.6 | 4.133 | 2.063 | 0.48 |
| 129 | 1.567 | 4.267 | 2.019 | 0.47 |
| 130 | 1.533 | 4.067 | 1.984 | 0.44 |
| 131 | 1.567 | 4.233 | 1.959 | 0.464 |
| 132 | 1.5 | 4.0 | 1.93 | 0.46 |
| 133 | 1.467 | 4.167 | 1.896 | 0.488 |
| 134 | 1.3 | 4.233 | 1.864 | 0.519 |
| 135 | 1.333 | 4.233 | 1.819 | 0.492 |
| 136 | 1.367 | 3.967 | 1.772 | 0.478 |
| 137 | 1.3 | 3.967 | 1.736 | 0.496 |
| 138 | 1.233 | 4.233 | 1.695 | 0.536 |
| 139 | 1.133 | 4.133 | 1.633 | 0.506 |
| 140 | 1.2 | 3.633 | 1.571 | 0.469 |
| 141 | 1.067 | 3.933 | 1.541 | 0.513 |
| 142 | 1.0 | 3.833 | 1.502 | 0.528 |
| 143 | 1.0 | 3.933 | 1.445 | 0.503 |
| 144 | 0.967 | 3.7 | 1.384 | 0.474 |
| 145 | 0.967 | 3.633 | 1.375 | 0.513 |
| 146 | 0.933 | 3.7 | 1.318 | 0.491 |
| 147 | 0.9 | 3.5 | 1.287 | 0.504 |
| 148 | 0.867 | 3.467 | 1.22 | 0.446 |
| 149 | 0.9 | 3.267 | 1.215 | 0.46 |
| 150 | 0.9 | 3.367 | 1.188 | 0.471 |
| 151 | 0.867 | 3.367 | 1.155 | 0.473 |
| 152 | 0.867 | 3.367 | 1.119 | 0.474 |
| 153 | 0.9 | 3.433 | 1.086 | 0.475 |
| 154 | 0.9 | 3.3 | 1.055 | 0.47 |
| 155 | 0.867 | 3.167 | 1.027 | 0.43 |
| 156 | 0.833 | 3.167 | 1.031 | 0.445 |
| 157 | 0.767 | 3.233 | 1.023 | 0.439 |
| 158 | 0.767 | 3.333 | 1.02 | 0.456 |
| 159 | 0.733 | 3.033 | 1.009 | 0.445 |
| 160 | 0.733 | 3.3 | 1.013 | 0.491 |
| 161 | 0.667 | 3.2 | 0.982 | 0.474 |
| 162 | 0.633 | 3.1 | 0.952 | 0.474 |
| 163 | 0.633 | 3.133 | 0.931 | 0.486 |
| 164 | 0.6 | 3.033 | 0.888 | 0.468 |
| 165 | 0.567 | 2.967 | 0.868 | 0.466 |
| 166 | 0.5 | 3.133 | 0.839 | 0.475 |
| 167 | 0.467 | 3.2 | 0.818 | 0.483 |
| 168 | 0.467 | 3.167 | 0.773 | 0.481 |
| 169 | 0.467 | 2.9 | 0.75 | 0.481 |
| 170 | 0.467 | 2.867 | 0.703 | 0.466 |
| 171 | 0.467 | 3.133 | 0.686 | 0.49 |
| 172 | 0.467 | 2.833 | 0.656 | 0.472 |
| 173 | 0.467 | 2.667 | 0.63 | 0.465 |
| 174 | 0.433 | 2.9 | 0.603 | 0.443 |
| 175 | 0.433 | 2.833 | 0.598 | 0.442 |
| 176 | 0.433 | 2.633 | 0.597 | 0.437 |
| 177 | 0.367 | 2.767 | 0.59 | 0.44 |
| 178 | 0.367 | 2.867 | 0.601 | 0.459 |
| 179 | 0.367 | 2.8 | 0.598 | 0.472 |
| 180 | 0.367 | 2.833 | 0.597 | 0.476 |
| 181 | 0.367 | 2.567 | 0.569 | 0.434 |
| 182 | 0.367 | 2.933 | 0.577 | 0.483 |
| 183 | 0.367 | 2.833 | 0.56 | 0.474 |
| 184 | 0.367 | 2.667 | 0.542 | 0.461 |
| 185 | 0.367 | 2.867 | 0.537 | 0.505 |
| 186 | 0.367 | 2.633 | 0.521 | 0.47 |
| 187 | 0.367 | 2.733 | 0.517 | 0.485 |
| 188 | 0.367 | 2.9 | 0.502 | 0.465 |
| 189 | 0.367 | 2.733 | 0.502 | 0.459 |
| 190 | 0.333 | 2.833 | 0.51 | 0.47 |
| 191 | 0.367 | 2.733 | 0.508 | 0.464 |
| 192 | 0.367 | 2.767 | 0.501 | 0.456 |
| 193 | 0.367 | 2.7 | 0.483 | 0.416 |
| 194 | 0.367 | 2.6 | 0.501 | 0.448 |
| 195 | 0.333 | 2.7 | 0.513 | 0.47 |
| 196 | 0.333 | 2.767 | 0.509 | 0.465 |
| 197 | 0.333 | 2.6 | 0.494 | 0.437 |
| 198 | 0.333 | 2.8 | 0.507 | 0.466 |
| 199 | 0.333 | 2.733 | 0.518 | 0.482 |
| 200 | 0.333 | 2.7 | 0.514 | 0.485 |
| 201 | 0.3 | 2.733 | 0.49 | 0.462 |
| 202 | 0.3 | 2.433 | 0.488 | 0.45 |
| 203 | 0.3 | 2.567 | 0.481 | 0.449 |
| 204 | 0.3 | 2.633 | 0.468 | 0.449 |
| 205 | 0.3 | 2.567 | 0.47 | 0.458 |
| 206 | 0.3 | 2.6 | 0.466 | 0.451 |
| 207 | 0.3 | 2.767 | 0.462 | 0.45 |
| 208 | 0.3 | 2.767 | 0.455 | 0.469 |
| 209 | 0.267 | 2.667 | 0.459 | 0.472 |
| 210 | 0.267 | 2.567 | 0.44 | 0.445 |
| 211 | 0.233 | 2.367 | 0.427 | 0.428 |
| 212 | 0.233 | 2.6 | 0.412 | 0.427 |
| 213 | 0.233 | 2.8 | 0.428 | 0.449 |
| 214 | 0.233 | 2.6 | 0.426 | 0.458 |
| 215 | 0.2 | 2.5 | 0.413 | 0.439 |
| 216 | 0.2 | 2.6 | 0.417 | 0.477 |
| 217 | 0.2 | 2.533 | 0.38 | 0.447 |
| 218 | 0.2 | 2.667 | 0.372 | 0.468 |
| 219 | 0.2 | 2.433 | 0.352 | 0.434 |
| 220 | 0.2 | 2.533 | 0.355 | 0.461 |
| 221 | 0.167 | 2.7 | 0.347 | 0.472 |
| 222 | 0.167 | 2.4 | 0.349 | 0.466 |
| 223 | 0.167 | 2.633 | 0.339 | 0.464 |
| 224 | 0.167 | 2.5 | 0.331 | 0.454 |
| 225 | 0.167 | 2.467 | 0.314 | 0.427 |
| 226 | 0.167 | 2.633 | 0.319 | 0.457 |
| 227 | 0.167 | 2.533 | 0.312 | 0.458 |
| 228 | 0.167 | 2.567 | 0.308 | 0.463 |
| 229 | 0.167 | 2.567 | 0.308 | 0.468 |
| 230 | 0.167 | 2.4 | 0.294 | 0.428 |
| 231 | 0.133 | 2.433 | 0.303 | 0.449 |
| 232 | 0.133 | 2.433 | 0.305 | 0.458 |
| 233 | 0.133 | 2.4 | 0.295 | 0.437 |
| 234 | 0.1 | 2.333 | 0.301 | 0.442 |
| 235 | 0.1 | 2.2 | 0.299 | 0.45 |
| 236 | 0.1 | 2.5 | 0.299 | 0.477 |
| 237 | 0.1 | 2.367 | 0.275 | 0.434 |
| 238 | 0.1 | 2.467 | 0.281 | 0.464 |
| 239 | 0.1 | 2.5 | 0.276 | 0.47 |
| 240 | 0.1 | 2.433 | 0.265 | 0.449 |
| 241 | 0.1 | 2.3 | 0.265 | 0.452 |
| 242 | 0.1 | 2.4 | 0.252 | 0.445 |
| 243 | 0.1 | 2.367 | 0.245 | 0.446 |
| 244 | 0.1 | 2.367 | 0.234 | 0.421 |
| 245 | 0.1 | 2.333 | 0.25 | 0.465 |
| 246 | 0.1 | 2.267 | 0.241 | 0.448 |
| 247 | 0.1 | 2.367 | 0.234 | 0.45 |
| 248 | 0.1 | 2.533 | 0.237 | 0.456 |
| 249 | 0.1 | 2.6 | 0.249 | 0.48 |
| 250 | 0.067 | 2.5 | 0.231 | 0.449 |
| 251 | 0.067 | 2.3 | 0.239 | 0.456 |
| 252 | 0.1 | 2.533 | 0.231 | 0.45 |
| 253 | 0.1 | 2.533 | 0.245 | 0.473 |
| 254 | 0.1 | 2.367 | 0.238 | 0.456 |
| 255 | 0.1 | 2.5 | 0.237 | 0.457 |
| 256 | 0.1 | 2.533 | 0.262 | 0.496 |
| 257 | 0.1 | 2.367 | 0.229 | 0.436 |
| 258 | 0.1 | 2.4 | 0.225 | 0.433 |
| 259 | 0.1 | 2.267 | 0.231 | 0.428 |
| 260 | 0.1 | 2.367 | 0.23 | 0.443 |
| 261 | 0.1 | 2.367 | 0.243 | 0.457 |
| 262 | 0.1 | 2.2 | 0.219 | 0.415 |
| 263 | 0.1 | 2.3 | 0.246 | 0.461 |
| 264 | 0.1 | 2.433 | 0.235 | 0.451 |
| 265 | 0.1 | 2.6 | 0.231 | 0.457 |
| 266 | 0.1 | 2.367 | 0.25 | 0.462 |
| 267 | 0.067 | 2.367 | 0.24 | 0.454 |
| 268 | 0.067 | 2.233 | 0.228 | 0.437 |
| 269 | 0.067 | 2.733 | 0.244 | 0.483 |
| 270 | 0.067 | 2.433 | 0.223 | 0.43 |
| 271 | 0.033 | 2.2 | 0.221 | 0.423 |
| 272 | 0.0 | 2.433 | 0.221 | 0.447 |
| 273 | 0.0 | 2.233 | 0.224 | 0.446 |
| 274 | 0.0 | 2.367 | 0.224 | 0.471 |
| 275 | 0.0 | 2.267 | 0.207 | 0.461 |
| 276 | 0.0 | 2.2 | 0.209 | 0.468 |
| 277 | 0.0 | 2.5 | 0.211 | 0.511 |
| 278 | 0.0 | 2.367 | 0.187 | 0.489 |
| 279 | 0.0 | 2.5 | 0.16 | 0.481 |
| 280 | 0.0 | 2.3 | 0.148 | 0.452 |
| 281 | 0.0 | 2.033 | 0.139 | 0.441 |
| 282 | 0.0 | 2.333 | 0.138 | 0.455 |
| 283 | 0.0 | 2.233 | 0.141 | 0.45 |
| 284 | 0.0 | 2.433 | 0.146 | 0.471 |
| 285 | 0.0 | 2.267 | 0.137 | 0.442 |
| 286 | 0.0 | 2.233 | 0.137 | 0.451 |
| 287 | 0.0 | 2.367 | 0.143 | 0.465 |
| 288 | 0.0 | 2.5 | 0.118 | 0.427 |
| 289 | 0.0 | 2.233 | 0.119 | 0.409 |
| 290 | 0.0 | 2.233 | 0.137 | 0.453 |
| 291 | 0.0 | 2.333 | 0.141 | 0.462 |
| 292 | 0.0 | 2.233 | 0.137 | 0.448 |
| 293 | 0.0 | 2.333 | 0.123 | 0.431 |
| 294 | 0.0 | 2.4 | 0.137 | 0.457 |
| 295 | 0.0 | 2.567 | 0.141 | 0.466 |
| 296 | 0.0 | 2.267 | 0.137 | 0.457 |
| 297 | 0.0 | 2.267 | 0.135 | 0.449 |
| 298 | 0.0 | 2.467 | 0.137 | 0.454 |
| 299 | 0.0 | 2.467 | 0.144 | 0.469 |
| 300 | 0.0 | 2.1 | 0.125 | 0.427 |
| 301 | 0.0 | 2.2 | 0.156 | 0.481 |
| 302 | 0.0 | 2.3 | 0.159 | 0.484 |
| 303 | 0.0 | 2.367 | 0.135 | 0.459 |
| 304 | 0.0 | 2.3 | 0.134 | 0.453 |
| 305 | 0.0 | 2.267 | 0.131 | 0.445 |
| 306 | 0.0 | 2.433 | 0.152 | 0.471 |
| 307 | 0.0 | 2.5 | 0.141 | 0.467 |
| 308 | 0.0 | 2.1 | 0.136 | 0.441 |
| 309 | 0.0 | 2.4 | 0.142 | 0.471 |
| 310 | 0.0 | 2.3 | 0.141 | 0.46 |
| 311 | 0.0 | 2.333 | 0.147 | 0.469 |
| 312 | 0.0 | 2.2 | 0.135 | 0.445 |
| 313 | 0.0 | 2.3 | 0.131 | 0.436 |
| 314 | 0.0 | 2.3 | 0.133 | 0.442 |
| 315 | 0.0 | 2.4 | 0.132 | 0.444 |
| 316 | 0.0 | 2.3 | 0.136 | 0.453 |
| 317 | 0.0 | 2.067 | 0.117 | 0.413 |
| 318 | 0.0 | 2.333 | 0.14 | 0.465 |
| 319 | 0.0 | 2.2 | 0.139 | 0.446 |
| 320 | 0.0 | 2.2 | 0.148 | 0.464 |
| 321 | 0.0 | 2.1 | 0.137 | 0.443 |
| 322 | 0.0 | 2.267 | 0.139 | 0.45 |
| 323 | 0.0 | 2.3 | 0.122 | 0.425 |
| 324 | 0.0 | 2.233 | 0.142 | 0.456 |
| 325 | 0.0 | 2.433 | 0.133 | 0.455 |
| 326 | 0.0 | 2.267 | 0.122 | 0.429 |
| 327 | 0.0 | 2.2 | 0.143 | 0.463 |
| 328 | 0.0 | 2.433 | 0.135 | 0.458 |
| 329 | 0.0 | 2.133 | 0.134 | 0.446 |
| 330 | 0.0 | 2.267 | 0.131 | 0.441 |
| 331 | 0.0 | 2.367 | 0.123 | 0.427 |
| 332 | 0.0 | 2.3 | 0.132 | 0.447 |
| 333 | 0.0 | 2.4 | 0.139 | 0.467 |
| 334 | 0.0 | 2.367 | 0.134 | 0.451 |
| 335 | 0.0 | 2.267 | 0.129 | 0.435 |
| 336 | 0.0 | 2.2 | 0.129 | 0.43 |
| 337 | 0.0 | 2.233 | 0.139 | 0.449 |
| 338 | 0.0 | 2.333 | 0.136 | 0.461 |
| 339 | 0.0 | 2.3 | 0.135 | 0.452 |
| 340 | 0.0 | 2.167 | 0.13 | 0.436 |
| 341 | 0.0 | 2.267 | 0.136 | 0.45 |
| 342 | 0.0 | 2.4 | 0.135 | 0.456 |
| 343 | 0.0 | 2.1 | 0.125 | 0.419 |
| 344 | 0.0 | 2.333 | 0.143 | 0.462 |
| 345 | 0.0 | 2.333 | 0.147 | 0.471 |
| 346 | 0.0 | 2.3 | 0.136 | 0.452 |
| 347 | 0.0 | 2.133 | 0.132 | 0.445 |
| 348 | 0.0 | 2.167 | 0.136 | 0.444 |
| 349 | 0.0 | 2.2 | 0.125 | 0.427 |
| 350 | 0.0 | 2.5 | 0.141 | 0.472 |
| 351 | 0.0 | 2.533 | 0.147 | 0.482 |
| 352 | 0.0 | 2.333 | 0.158 | 0.492 |
| 353 | 0.0 | 2.633 | 0.156 | 0.502 |
| 354 | 0.0 | 2.433 | 0.142 | 0.459 |
| 355 | 0.0 | 2.333 | 0.131 | 0.44 |
| 356 | 0.0 | 2.1 | 0.136 | 0.438 |
| 357 | 0.0 | 2.3 | 0.13 | 0.427 |
| 358 | 0.0 | 2.267 | 0.135 | 0.441 |
| 359 | 0.0 | 2.367 | 0.147 | 0.476 |
| 360 | 0.0 | 2.3 | 0.136 | 0.452 |
| 361 | 0.0 | 2.167 | 0.142 | 0.455 |
| 362 | 0.0 | 2.367 | 0.133 | 0.452 |
| 363 | 0.0 | 2.333 | 0.142 | 0.464 |
| 364 | 0.0 | 2.4 | 0.138 | 0.455 |
| 365 | 0.0 | 2.3 | 0.136 | 0.449 |
| 366 | 0.0 | 2.1 | 0.135 | 0.448 |
| 367 | 0.0 | 2.267 | 0.14 | 0.458 |
| 368 | 0.0 | 2.567 | 0.137 | 0.459 |
| 369 | 0.0 | 2.333 | 0.141 | 0.466 |
| 370 | 0.0 | 2.167 | 0.146 | 0.463 |
| 371 | 0.0 | 2.433 | 0.142 | 0.467 |
| 372 | 0.0 | 2.4 | 0.14 | 0.458 |
| 373 | 0.0 | 2.433 | 0.132 | 0.449 |
| 374 | 0.0 | 2.233 | 0.131 | 0.441 |
| 375 | 0.0 | 2.267 | 0.132 | 0.442 |
| 376 | 0.0 | 2.233 | 0.136 | 0.449 |
| 377 | 0.0 | 2.5 | 0.135 | 0.466 |
| 378 | 0.0 | 2.167 | 0.143 | 0.454 |
| 379 | 0.0 | 2.467 | 0.126 | 0.443 |
| 380 | 0.0 | 2.333 | 0.134 | 0.458 |
| 381 | 0.0 | 2.167 | 0.132 | 0.433 |
| 382 | 0.0 | 2.167 | 0.139 | 0.456 |
| 383 | 0.0 | 2.3 | 0.12 | 0.417 |
| 384 | 0.0 | 2.1 | 0.138 | 0.442 |
| 385 | 0.0 | 2.433 | 0.138 | 0.463 |
| 386 | 0.0 | 2.3 | 0.132 | 0.451 |
| 387 | 0.0 | 2.167 | 0.122 | 0.412 |
| 388 | 0.0 | 2.267 | 0.136 | 0.455 |
| 389 | 0.0 | 2.067 | 0.133 | 0.444 |
| 390 | 0.0 | 2.167 | 0.121 | 0.428 |
| 391 | 0.0 | 2.367 | 0.141 | 0.468 |
| 392 | 0.0 | 2.167 | 0.128 | 0.438 |
| 393 | 0.0 | 2.4 | 0.136 | 0.46 |
| 394 | 0.0 | 2.333 | 0.132 | 0.446 |
| 395 | 0.0 | 2.267 | 0.139 | 0.46 |
| 396 | 0.0 | 2.333 | 0.123 | 0.431 |
| 397 | 0.0 | 2.367 | 0.143 | 0.473 |
| 398 | 0.0 | 2.133 | 0.131 | 0.423 |
| 399 | 0.0 | 2.233 | 0.133 | 0.439 |
| 400 | 0.0 | 2.333 | 0.136 | 0.446 |
| 401 | 0.0 | 2.367 | 0.134 | 0.453 |
| 402 | 0.0 | 2.433 | 0.146 | 0.473 |
| 403 | 0.0 | 2.367 | 0.134 | 0.455 |
| 404 | 0.0 | 2.467 | 0.143 | 0.471 |
| 405 | 0.0 | 2.333 | 0.129 | 0.445 |
| 406 | 0.0 | 2.6 | 0.141 | 0.478 |
| 407 | 0.0 | 2.233 | 0.134 | 0.45 |
| 408 | 0.0 | 2.467 | 0.138 | 0.462 |
| 409 | 0.0 | 2.333 | 0.141 | 0.461 |
| 410 | 0.0 | 2.567 | 0.145 | 0.478 |
| 411 | 0.0 | 2.333 | 0.145 | 0.459 |
| 412 | 0.0 | 2.267 | 0.143 | 0.453 |
| 413 | 0.0 | 2.4 | 0.142 | 0.473 |
| 414 | 0.0 | 2.333 | 0.151 | 0.483 |
| 415 | 0.0 | 2.3 | 0.142 | 0.456 |
| 416 | 0.0 | 2.433 | 0.132 | 0.449 |
| 417 | 0.0 | 2.3 | 0.125 | 0.437 |
| 418 | 0.0 | 2.433 | 0.139 | 0.462 |
| 419 | 0.0 | 2.1 | 0.122 | 0.426 |
| 420 | 0.0 | 2.2 | 0.133 | 0.44 |
| 421 | 0.0 | 2.4 | 0.144 | 0.476 |
| 422 | 0.0 | 2.2 | 0.132 | 0.437 |
| 423 | 0.0 | 2.067 | 0.13 | 0.425 |
| 424 | 0.0 | 2.3 | 0.149 | 0.466 |
| 425 | 0.0 | 2.433 | 0.147 | 0.464 |
| 426 | 0.0 | 2.433 | 0.127 | 0.432 |
| 427 | 0.0 | 2.467 | 0.139 | 0.462 |
| 428 | 0.0 | 2.433 | 0.142 | 0.466 |
| 429 | 0.0 | 2.267 | 0.142 | 0.464 |
| 430 | 0.0 | 2.5 | 0.138 | 0.463 |
| 431 | 0.0 | 2.3 | 0.123 | 0.436 |
| 432 | 0.0 | 2.667 | 0.146 | 0.476 |
| 433 | 0.0 | 2.3 | 0.136 | 0.451 |
| 434 | 0.0 | 2.2 | 0.134 | 0.439 |
| 435 | 0.0 | 2.267 | 0.14 | 0.456 |
| 436 | 0.0 | 2.233 | 0.137 | 0.448 |
| 437 | 0.0 | 2.267 | 0.126 | 0.427 |
| 438 | 0.0 | 2.133 | 0.13 | 0.431 |
| 439 | 0.0 | 2.133 | 0.141 | 0.454 |
| 440 | 0.0 | 2.233 | 0.134 | 0.45 |
| 441 | 0.0 | 2.2 | 0.123 | 0.424 |
| 442 | 0.0 | 2.133 | 0.132 | 0.427 |
| 443 | 0.0 | 2.233 | 0.137 | 0.454 |
| 444 | 0.0 | 2.233 | 0.124 | 0.427 |
| 445 | 0.0 | 2.233 | 0.135 | 0.449 |
| 446 | 0.0 | 2.2 | 0.139 | 0.448 |
| 447 | 0.0 | 2.3 | 0.142 | 0.468 |
| 448 | 0.0 | 2.133 | 0.134 | 0.442 |
| 449 | 0.0 | 2.2 | 0.134 | 0.439 |
| 450 | 0.0 | 2.333 | 0.13 | 0.446 |
| 451 | 0.0 | 2.4 | 0.15 | 0.478 |
| 452 | 0.0 | 2.3 | 0.133 | 0.44 |
| 453 | 0.0 | 2.267 | 0.122 | 0.426 |
| 454 | 0.0 | 2.033 | 0.122 | 0.418 |
| 455 | 0.0 | 2.3 | 0.126 | 0.436 |
| 456 | 0.0 | 2.3 | 0.129 | 0.445 |
| 457 | 0.0 | 2.367 | 0.134 | 0.455 |
| 458 | 0.0 | 2.2 | 0.121 | 0.427 |
| 459 | 0.0 | 2.533 | 0.129 | 0.444 |
| 460 | 0.0 | 2.2 | 0.134 | 0.44 |
| 461 | 0.0 | 2.4 | 0.167 | 0.508 |
| 462 | 0.0 | 2.167 | 0.127 | 0.427 |
| 463 | 0.0 | 2.333 | 0.137 | 0.449 |
| 464 | 0.0 | 2.333 | 0.135 | 0.456 |
| 465 | 0.0 | 2.633 | 0.146 | 0.488 |
| 466 | 0.0 | 2.333 | 0.15 | 0.481 |
| 467 | 0.0 | 2.367 | 0.143 | 0.464 |
| 468 | 0.0 | 2.2 | 0.138 | 0.451 |
| 469 | 0.0 | 2.4 | 0.127 | 0.437 |
| 470 | 0.0 | 2.1 | 0.14 | 0.441 |
| 471 | 0.0 | 2.333 | 0.143 | 0.458 |
| 472 | 0.0 | 2.4 | 0.149 | 0.475 |
| 473 | 0.0 | 2.3 | 0.134 | 0.445 |
| 474 | 0.0 | 2.5 | 0.145 | 0.472 |
| 475 | 0.0 | 2.4 | 0.15 | 0.483 |
| 476 | 0.0 | 2.2 | 0.139 | 0.451 |
| 477 | 0.0 | 2.467 | 0.142 | 0.47 |
| 478 | 0.0 | 2.4 | 0.138 | 0.458 |
| 479 | 0.0 | 2.233 | 0.133 | 0.441 |
| 480 | 0.0 | 2.4 | 0.129 | 0.448 |
| 481 | 0.0 | 2.3 | 0.131 | 0.45 |
| 482 | 0.0 | 2.333 | 0.136 | 0.454 |
| 483 | 0.0 | 2.433 | 0.153 | 0.492 |
| 484 | 0.0 | 2.367 | 0.133 | 0.445 |
| 485 | 0.0 | 2.4 | 0.135 | 0.453 |
| 486 | 0.0 | 2.3 | 0.136 | 0.452 |
| 487 | 0.0 | 2.233 | 0.137 | 0.452 |
| 488 | 0.0 | 2.4 | 0.152 | 0.488 |
| 489 | 0.0 | 2.3 | 0.137 | 0.455 |
| 490 | 0.0 | 2.4 | 0.126 | 0.442 |
| 491 | 0.0 | 2.2 | 0.137 | 0.455 |
| 492 | 0.0 | 2.433 | 0.136 | 0.462 |
| 493 | 0.0 | 2.333 | 0.134 | 0.451 |
| 494 | 0.0 | 2.4 | 0.123 | 0.433 |
| 495 | 0.0 | 2.233 | 0.131 | 0.443 |
| 496 | 0.0 | 2.333 | 0.129 | 0.442 |
| 497 | 0.0 | 2.233 | 0.124 | 0.437 |
| 498 | 0.0 | 2.267 | 0.135 | 0.451 |
| 499 | 0.0 | 2.333 | 0.134 | 0.456 |
| 500 | 0.0 | 2.267 | 0.149 | 0.473 |

****

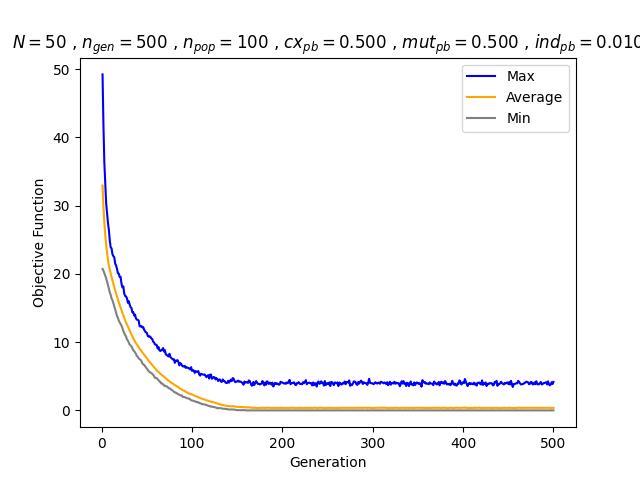
**SETTING 5**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Generation | Minimum Fitness | Maximum Fitness | Average Fitness | Standard deviation |
| 1 | 20.433 | 50.033 | 33.24 | 5.842 |
| 2 | 20.233 | 41.533 | 29.924 | 4.457 |
| 3 | 19.967 | 37.033 | 27.533 | 3.605 |
| 4 | 19.533 | 33.433 | 25.628 | 2.881 |
| 5 | 19.4 | 30.267 | 24.185 | 2.373 |
| 6 | 19.0 | 28.5 | 23.054 | 2.047 |
| 7 | 18.5 | 27.3 | 22.128 | 1.727 |
| 8 | 17.733 | 26.433 | 21.341 | 1.593 |
| 9 | 17.433 | 25.4 | 20.657 | 1.428 |
| 10 | 16.733 | 24.9 | 20.089 | 1.35 |
| 11 | 16.533 | 23.667 | 19.545 | 1.267 |
| 12 | 16.1 | 23.133 | 19.023 | 1.228 |
| 13 | 15.733 | 22.633 | 18.56 | 1.175 |
| 14 | 15.567 | 22.333 | 18.145 | 1.155 |
| 15 | 15.067 | 21.7 | 17.726 | 1.119 |
| 16 | 14.433 | 21.133 | 17.314 | 1.135 |
| 17 | 14.167 | 21.1 | 16.864 | 1.143 |
| 18 | 13.833 | 20.767 | 16.445 | 1.139 |
| 19 | 13.5 | 20.167 | 16.014 | 1.116 |
| 20 | 13.233 | 19.333 | 15.591 | 1.063 |
| 21 | 12.9 | 19.4 | 15.229 | 1.109 |
| 22 | 12.667 | 18.9 | 14.804 | 1.086 |
| 23 | 12.3 | 18.433 | 14.419 | 1.065 |
| 24 | 11.933 | 18.667 | 14.05 | 1.073 |
| 25 | 11.733 | 17.567 | 13.67 | 0.982 |
| 26 | 11.467 | 17.233 | 13.337 | 0.968 |
| 27 | 11.133 | 16.8 | 13.007 | 0.93 |
| 28 | 10.967 | 16.4 | 12.749 | 0.909 |
| 29 | 10.5 | 16.267 | 12.467 | 0.911 |
| 30 | 10.3 | 16.0 | 12.183 | 0.918 |
| 31 | 10.133 | 15.8 | 11.919 | 0.918 |
| 32 | 9.9 | 16.2 | 11.67 | 0.953 |
| 33 | 9.833 | 15.767 | 11.424 | 0.955 |
| 34 | 9.633 | 15.433 | 11.158 | 0.928 |
| 35 | 9.5 | 15.033 | 10.882 | 0.877 |
| 36 | 9.3 | 14.4 | 10.665 | 0.831 |
| 37 | 9.1 | 14.167 | 10.458 | 0.834 |
| 38 | 8.933 | 14.333 | 10.254 | 0.875 |
| 39 | 8.8 | 13.633 | 10.065 | 0.827 |
| 40 | 8.7 | 13.9 | 9.885 | 0.847 |
| 41 | 8.567 | 13.167 | 9.689 | 0.746 |
| 42 | 8.433 | 12.567 | 9.523 | 0.705 |
| 43 | 8.267 | 13.567 | 9.416 | 0.822 |
| 44 | 8.1 | 13.4 | 9.272 | 0.803 |
| 45 | 7.967 | 12.733 | 9.139 | 0.773 |
| 46 | 7.633 | 12.6 | 9.009 | 0.808 |
| 47 | 7.533 | 12.567 | 8.816 | 0.796 |
| 48 | 7.433 | 12.667 | 8.645 | 0.781 |
| 49 | 7.433 | 12.533 | 8.507 | 0.808 |
| 50 | 7.1 | 12.9 | 8.372 | 0.855 |
| 51 | 7.033 | 12.4 | 8.239 | 0.852 |
| 52 | 6.967 | 12.1 | 8.089 | 0.819 |
| 53 | 6.833 | 12.067 | 7.964 | 0.859 |
| 54 | 6.733 | 12.267 | 7.826 | 0.874 |
| 55 | 6.667 | 11.767 | 7.645 | 0.811 |
| 56 | 6.467 | 11.467 | 7.512 | 0.773 |
| 57 | 6.333 | 11.2 | 7.393 | 0.79 |
| 58 | 6.3 | 11.6 | 7.295 | 0.811 |
| 59 | 6.1 | 11.2 | 7.176 | 0.827 |
| 60 | 5.9 | 10.9 | 7.05 | 0.811 |
| 61 | 5.833 | 11.2 | 6.932 | 0.845 |
| 62 | 5.667 | 10.8 | 6.791 | 0.813 |
| 63 | 5.533 | 10.433 | 6.661 | 0.776 |
| 64 | 5.5 | 10.733 | 6.585 | 0.862 |
| 65 | 5.4 | 10.533 | 6.459 | 0.822 |
| 66 | 5.3 | 10.333 | 6.34 | 0.79 |
| 67 | 5.267 | 10.3 | 6.251 | 0.804 |
| 68 | 5.133 | 10.2 | 6.139 | 0.803 |
| 69 | 5.067 | 10.533 | 6.037 | 0.839 |
| 70 | 5.0 | 9.833 | 5.885 | 0.815 |
| 71 | 4.833 | 9.5 | 5.762 | 0.771 |
| 72 | 4.7 | 9.867 | 5.671 | 0.813 |
| 73 | 4.633 | 9.3 | 5.576 | 0.758 |
| 74 | 4.467 | 9.667 | 5.496 | 0.807 |
| 75 | 4.433 | 9.467 | 5.441 | 0.806 |
| 76 | 4.4 | 9.433 | 5.347 | 0.822 |
| 77 | 4.3 | 8.933 | 5.243 | 0.805 |
| 78 | 4.267 | 9.333 | 5.179 | 0.861 |
| 79 | 4.133 | 8.867 | 5.036 | 0.798 |
| 80 | 4.1 | 9.067 | 4.931 | 0.805 |
| 81 | 4.067 | 8.7 | 4.855 | 0.807 |
| 82 | 3.867 | 8.867 | 4.773 | 0.798 |
| 83 | 3.8 | 8.7 | 4.665 | 0.77 |
| 84 | 3.733 | 8.433 | 4.593 | 0.759 |
| 85 | 3.667 | 9.1 | 4.56 | 0.854 |
| 86 | 3.6 | 8.833 | 4.485 | 0.823 |
| 87 | 3.533 | 8.4 | 4.416 | 0.821 |
| 88 | 3.5 | 8.567 | 4.317 | 0.816 |
| 89 | 3.467 | 8.333 | 4.23 | 0.794 |
| 90 | 3.367 | 8.233 | 4.177 | 0.837 |
| 91 | 3.333 | 8.3 | 4.09 | 0.84 |
| 92 | 3.3 | 8.133 | 3.987 | 0.823 |
| 93 | 3.267 | 7.933 | 3.889 | 0.775 |
| 94 | 3.267 | 7.933 | 3.798 | 0.756 |
| 95 | 3.133 | 7.567 | 3.754 | 0.79 |
| 96 | 2.967 | 7.633 | 3.667 | 0.747 |
| 97 | 2.9 | 7.767 | 3.636 | 0.79 |
| 98 | 2.9 | 7.8 | 3.591 | 0.787 |
| 99 | 2.9 | 8.067 | 3.545 | 0.79 |
| 100 | 2.833 | 7.5 | 3.522 | 0.778 |
| 101 | 2.8 | 7.533 | 3.468 | 0.774 |
| 102 | 2.767 | 7.567 | 3.436 | 0.802 |
| 103 | 2.7 | 7.767 | 3.379 | 0.841 |
| 104 | 2.733 | 7.467 | 3.283 | 0.804 |
| 105 | 2.567 | 7.467 | 3.227 | 0.812 |
| 106 | 2.433 | 7.067 | 3.15 | 0.775 |
| 107 | 2.433 | 7.033 | 3.095 | 0.775 |
| 108 | 2.3 | 7.267 | 3.054 | 0.823 |
| 109 | 2.3 | 7.267 | 2.995 | 0.822 |
| 110 | 2.233 | 7.267 | 2.935 | 0.82 |
| 111 | 2.267 | 6.967 | 2.871 | 0.816 |
| 112 | 2.233 | 6.8 | 2.801 | 0.81 |
| 113 | 2.2 | 7.067 | 2.758 | 0.863 |
| 114 | 2.133 | 6.933 | 2.655 | 0.778 |
| 115 | 2.033 | 7.367 | 2.64 | 0.859 |
| 116 | 2.033 | 6.533 | 2.586 | 0.792 |
| 117 | 2.033 | 6.667 | 2.519 | 0.745 |
| 118 | 1.967 | 7.4 | 2.505 | 0.82 |
| 119 | 1.8 | 6.533 | 2.459 | 0.735 |
| 120 | 1.767 | 6.7 | 2.436 | 0.796 |
| 121 | 1.7 | 6.6 | 2.411 | 0.797 |
| 122 | 1.633 | 6.533 | 2.371 | 0.823 |
| 123 | 1.633 | 6.9 | 2.325 | 0.851 |
| 124 | 1.667 | 6.567 | 2.247 | 0.822 |
| 125 | 1.6 | 6.333 | 2.179 | 0.8 |
| 126 | 1.5 | 6.4 | 2.12 | 0.825 |
| 127 | 1.467 | 5.967 | 2.028 | 0.752 |
| 128 | 1.4 | 6.5 | 2.025 | 0.85 |
| 129 | 1.4 | 6.233 | 1.992 | 0.836 |
| 130 | 1.367 | 5.767 | 1.94 | 0.784 |
| 131 | 1.4 | 5.7 | 1.891 | 0.766 |
| 132 | 1.4 | 5.867 | 1.838 | 0.767 |
| 133 | 1.4 | 5.833 | 1.805 | 0.774 |
| 134 | 1.4 | 6.033 | 1.778 | 0.781 |
| 135 | 1.333 | 5.567 | 1.74 | 0.738 |
| 136 | 1.3 | 5.833 | 1.734 | 0.769 |
| 137 | 1.233 | 5.833 | 1.716 | 0.778 |
| 138 | 1.267 | 5.967 | 1.722 | 0.825 |
| 139 | 1.267 | 5.933 | 1.71 | 0.811 |
| 140 | 1.267 | 5.767 | 1.661 | 0.781 |
| 141 | 1.2 | 5.767 | 1.643 | 0.79 |
| 142 | 1.133 | 5.7 | 1.583 | 0.759 |
| 143 | 1.133 | 5.733 | 1.578 | 0.782 |
| 144 | 1.133 | 5.767 | 1.598 | 0.843 |
| 145 | 1.133 | 5.467 | 1.536 | 0.786 |
| 146 | 1.133 | 6.3 | 1.529 | 0.857 |
| 147 | 1.133 | 5.567 | 1.487 | 0.77 |
| 148 | 1.067 | 5.367 | 1.461 | 0.742 |
| 149 | 1.033 | 5.667 | 1.476 | 0.809 |
| 150 | 1.067 | 6.333 | 1.484 | 0.897 |
| 151 | 1.033 | 5.267 | 1.419 | 0.749 |
| 152 | 1.0 | 5.5 | 1.409 | 0.778 |
| 153 | 1.0 | 5.767 | 1.413 | 0.828 |
| 154 | 0.867 | 5.533 | 1.38 | 0.786 |
| 155 | 0.8 | 5.6 | 1.377 | 0.818 |
| 156 | 0.8 | 5.467 | 1.371 | 0.827 |
| 157 | 0.767 | 5.767 | 1.351 | 0.832 |
| 158 | 0.767 | 5.733 | 1.329 | 0.856 |
| 159 | 0.767 | 5.733 | 1.271 | 0.836 |
| 160 | 0.767 | 5.067 | 1.234 | 0.786 |
| 161 | 0.767 | 5.333 | 1.205 | 0.83 |
| 162 | 0.767 | 5.567 | 1.183 | 0.852 |
| 163 | 0.733 | 5.467 | 1.128 | 0.811 |
| 164 | 0.733 | 5.7 | 1.117 | 0.87 |
| 165 | 0.733 | 5.267 | 1.081 | 0.823 |
| 166 | 0.733 | 5.467 | 1.049 | 0.803 |
| 167 | 0.733 | 5.067 | 1.026 | 0.758 |
| 168 | 0.733 | 5.467 | 1.037 | 0.82 |
| 169 | 0.733 | 5.233 | 1.021 | 0.804 |
| 170 | 0.7 | 5.667 | 1.069 | 0.901 |
| 171 | 0.733 | 5.033 | 1.013 | 0.787 |
| 172 | 0.733 | 5.6 | 1.013 | 0.823 |
| 173 | 0.7 | 5.033 | 0.998 | 0.773 |
| 174 | 0.667 | 5.167 | 1.0 | 0.786 |
| 175 | 0.667 | 5.5 | 1.021 | 0.852 |
| 176 | 0.633 | 5.367 | 1.007 | 0.814 |
| 177 | 0.633 | 5.433 | 1.014 | 0.819 |
| 178 | 0.633 | 5.0 | 0.976 | 0.758 |
| 179 | 0.633 | 5.4 | 0.972 | 0.794 |
| 180 | 0.633 | 4.633 | 0.948 | 0.738 |
| 181 | 0.6 | 5.233 | 0.925 | 0.751 |
| 182 | 0.6 | 5.1 | 0.951 | 0.792 |
| 183 | 0.567 | 5.067 | 0.951 | 0.81 |
| 184 | 0.467 | 4.667 | 0.925 | 0.755 |
| 185 | 0.5 | 5.267 | 0.948 | 0.842 |
| 186 | 0.5 | 4.733 | 0.892 | 0.758 |
| 187 | 0.5 | 5.133 | 0.894 | 0.812 |
| 188 | 0.467 | 5.033 | 0.888 | 0.831 |
| 189 | 0.467 | 5.1 | 0.843 | 0.806 |
| 190 | 0.467 | 5.033 | 0.842 | 0.837 |
| 191 | 0.433 | 5.267 | 0.821 | 0.863 |
| 192 | 0.433 | 4.467 | 0.779 | 0.763 |
| 193 | 0.467 | 4.933 | 0.749 | 0.775 |
| 194 | 0.467 | 5.033 | 0.771 | 0.834 |
| 195 | 0.433 | 5.367 | 0.725 | 0.797 |
| 196 | 0.433 | 4.767 | 0.734 | 0.795 |
| 197 | 0.433 | 5.133 | 0.751 | 0.831 |
| 198 | 0.4 | 5.4 | 0.757 | 0.85 |
| 199 | 0.4 | 4.633 | 0.737 | 0.778 |
| 200 | 0.367 | 5.067 | 0.738 | 0.824 |
| 201 | 0.367 | 5.167 | 0.734 | 0.818 |
| 202 | 0.367 | 5.267 | 0.744 | 0.851 |
| 203 | 0.367 | 5.267 | 0.714 | 0.832 |
| 204 | 0.367 | 5.133 | 0.692 | 0.821 |
| 205 | 0.367 | 5.133 | 0.654 | 0.803 |
| 206 | 0.367 | 4.6 | 0.637 | 0.779 |
| 207 | 0.367 | 4.8 | 0.656 | 0.813 |
| 208 | 0.333 | 5.1 | 0.669 | 0.862 |
| 209 | 0.267 | 4.867 | 0.619 | 0.78 |
| 210 | 0.267 | 4.867 | 0.635 | 0.81 |
| 211 | 0.233 | 5.133 | 0.618 | 0.801 |
| 212 | 0.2 | 4.5 | 0.624 | 0.766 |
| 213 | 0.2 | 5.0 | 0.632 | 0.823 |
| 214 | 0.2 | 5.067 | 0.628 | 0.837 |
| 215 | 0.2 | 4.8 | 0.584 | 0.775 |
| 216 | 0.2 | 4.8 | 0.574 | 0.792 |
| 217 | 0.2 | 4.933 | 0.531 | 0.793 |
| 218 | 0.2 | 4.9 | 0.518 | 0.814 |
| 219 | 0.167 | 4.8 | 0.505 | 0.81 |
| 220 | 0.167 | 4.7 | 0.47 | 0.781 |
| 221 | 0.167 | 4.933 | 0.48 | 0.815 |
| 222 | 0.133 | 4.767 | 0.463 | 0.792 |
| 223 | 0.133 | 4.933 | 0.49 | 0.854 |
| 224 | 0.133 | 4.733 | 0.457 | 0.793 |
| 225 | 0.133 | 4.633 | 0.434 | 0.768 |
| 226 | 0.1 | 4.433 | 0.41 | 0.74 |
| 227 | 0.1 | 4.6 | 0.425 | 0.777 |
| 228 | 0.1 | 4.6 | 0.404 | 0.754 |
| 229 | 0.1 | 4.567 | 0.418 | 0.808 |
| 230 | 0.1 | 4.567 | 0.427 | 0.83 |
| 231 | 0.067 | 5.133 | 0.419 | 0.847 |
| 232 | 0.067 | 4.367 | 0.379 | 0.767 |
| 233 | 0.067 | 4.7 | 0.38 | 0.804 |
| 234 | 0.067 | 4.967 | 0.389 | 0.827 |
| 235 | 0.067 | 4.867 | 0.386 | 0.836 |
| 236 | 0.067 | 4.9 | 0.395 | 0.854 |
| 237 | 0.067 | 5.4 | 0.389 | 0.888 |
| 238 | 0.067 | 4.633 | 0.348 | 0.794 |
| 239 | 0.067 | 4.733 | 0.384 | 0.858 |
| 240 | 0.067 | 4.467 | 0.345 | 0.797 |
| 241 | 0.067 | 5.1 | 0.37 | 0.851 |
| 242 | 0.067 | 4.4 | 0.332 | 0.775 |
| 243 | 0.067 | 4.467 | 0.34 | 0.803 |
| 244 | 0.067 | 4.767 | 0.346 | 0.804 |
| 245 | 0.067 | 4.167 | 0.314 | 0.749 |
| 246 | 0.067 | 4.4 | 0.308 | 0.735 |
| 247 | 0.067 | 4.233 | 0.334 | 0.758 |
| 248 | 0.067 | 4.633 | 0.336 | 0.803 |
| 249 | 0.067 | 5.033 | 0.357 | 0.856 |
| 250 | 0.067 | 4.733 | 0.351 | 0.829 |
| 251 | 0.067 | 4.667 | 0.341 | 0.816 |
| 252 | 0.067 | 4.767 | 0.365 | 0.855 |
| 253 | 0.067 | 4.233 | 0.36 | 0.791 |
| 254 | 0.067 | 4.733 | 0.361 | 0.849 |
| 255 | 0.067 | 4.533 | 0.321 | 0.772 |
| 256 | 0.067 | 4.6 | 0.338 | 0.807 |
| 257 | 0.067 | 5.067 | 0.345 | 0.831 |
| 258 | 0.067 | 4.7 | 0.346 | 0.81 |
| 259 | 0.067 | 4.4 | 0.362 | 0.813 |
| 260 | 0.067 | 5.033 | 0.378 | 0.871 |
| 261 | 0.067 | 4.967 | 0.363 | 0.861 |
| 262 | 0.067 | 4.533 | 0.322 | 0.774 |
| 263 | 0.067 | 4.633 | 0.324 | 0.779 |
| 264 | 0.067 | 4.733 | 0.341 | 0.805 |
| 265 | 0.067 | 4.567 | 0.338 | 0.794 |
| 266 | 0.067 | 4.7 | 0.337 | 0.818 |
| 267 | 0.067 | 4.633 | 0.347 | 0.835 |
| 268 | 0.067 | 4.533 | 0.336 | 0.802 |
| 269 | 0.067 | 4.8 | 0.325 | 0.802 |
| 270 | 0.067 | 4.967 | 0.37 | 0.871 |
| 271 | 0.067 | 4.467 | 0.313 | 0.753 |
| 272 | 0.067 | 4.967 | 0.354 | 0.851 |
| 273 | 0.067 | 4.567 | 0.347 | 0.815 |
| 274 | 0.067 | 4.633 | 0.322 | 0.794 |
| 275 | 0.067 | 5.067 | 0.35 | 0.861 |
| 276 | 0.067 | 4.933 | 0.351 | 0.851 |
| 277 | 0.067 | 4.933 | 0.336 | 0.818 |
| 278 | 0.067 | 4.267 | 0.336 | 0.771 |
| 279 | 0.067 | 4.533 | 0.346 | 0.794 |
| 280 | 0.067 | 4.467 | 0.372 | 0.849 |
| 281 | 0.067 | 4.8 | 0.353 | 0.815 |
| 282 | 0.067 | 4.367 | 0.33 | 0.785 |
| 283 | 0.067 | 4.167 | 0.33 | 0.77 |
| 284 | 0.067 | 4.533 | 0.341 | 0.804 |
| 285 | 0.067 | 4.767 | 0.351 | 0.814 |
| 286 | 0.067 | 4.767 | 0.366 | 0.846 |
| 287 | 0.067 | 4.633 | 0.343 | 0.791 |
| 288 | 0.067 | 4.867 | 0.345 | 0.825 |
| 289 | 0.067 | 4.733 | 0.336 | 0.806 |
| 290 | 0.067 | 4.6 | 0.343 | 0.817 |
| 291 | 0.067 | 4.6 | 0.337 | 0.793 |
| 292 | 0.067 | 4.667 | 0.359 | 0.823 |
| 293 | 0.067 | 4.5 | 0.344 | 0.805 |
| 294 | 0.067 | 4.833 | 0.344 | 0.83 |
| 295 | 0.067 | 4.5 | 0.344 | 0.794 |
| 296 | 0.067 | 4.433 | 0.328 | 0.774 |
| 297 | 0.067 | 4.967 | 0.369 | 0.86 |
| 298 | 0.067 | 4.833 | 0.354 | 0.811 |
| 299 | 0.067 | 4.067 | 0.301 | 0.711 |
| 300 | 0.067 | 4.5 | 0.338 | 0.8 |
| 301 | 0.067 | 4.533 | 0.343 | 0.799 |
| 302 | 0.067 | 4.267 | 0.309 | 0.735 |
| 303 | 0.067 | 4.767 | 0.328 | 0.782 |
| 304 | 0.033 | 4.467 | 0.336 | 0.793 |
| 305 | 0.033 | 4.167 | 0.315 | 0.73 |
| 306 | 0.033 | 5.0 | 0.33 | 0.813 |
| 307 | 0.033 | 4.367 | 0.34 | 0.791 |
| 308 | 0.033 | 4.3 | 0.331 | 0.771 |
| 309 | 0.033 | 4.6 | 0.355 | 0.822 |
| 310 | 0.033 | 4.933 | 0.338 | 0.816 |
| 311 | 0.033 | 4.433 | 0.329 | 0.776 |
| 312 | 0.033 | 4.333 | 0.348 | 0.801 |
| 313 | 0.033 | 4.167 | 0.314 | 0.74 |
| 314 | 0.033 | 4.567 | 0.31 | 0.783 |
| 315 | 0.033 | 4.5 | 0.31 | 0.779 |
| 316 | 0.033 | 4.667 | 0.339 | 0.837 |
| 317 | 0.033 | 4.367 | 0.31 | 0.791 |
| 318 | 0.033 | 4.633 | 0.336 | 0.848 |
| 319 | 0.033 | 4.5 | 0.318 | 0.818 |
| 320 | 0.033 | 5.0 | 0.305 | 0.831 |
| 321 | 0.033 | 4.5 | 0.297 | 0.773 |
| 322 | 0.033 | 4.567 | 0.295 | 0.792 |
| 323 | 0.033 | 4.633 | 0.314 | 0.799 |
| 324 | 0.033 | 4.833 | 0.336 | 0.847 |
| 325 | 0.033 | 4.733 | 0.338 | 0.85 |
| 326 | 0.033 | 5.033 | 0.335 | 0.848 |
| 327 | 0.033 | 4.233 | 0.312 | 0.791 |
| 328 | 0.033 | 4.533 | 0.312 | 0.793 |
| 329 | 0.033 | 4.467 | 0.312 | 0.809 |
| 330 | 0.033 | 5.2 | 0.333 | 0.864 |
| 331 | 0.033 | 4.533 | 0.311 | 0.809 |
| 332 | 0.033 | 4.2 | 0.288 | 0.75 |
| 333 | 0.033 | 4.867 | 0.332 | 0.879 |
| 334 | 0.033 | 4.633 | 0.323 | 0.828 |
| 335 | 0.033 | 5.0 | 0.31 | 0.837 |
| 336 | 0.033 | 4.7 | 0.3 | 0.797 |
| 337 | 0.033 | 4.9 | 0.318 | 0.819 |
| 338 | 0.033 | 4.4 | 0.269 | 0.748 |
| 339 | 0.033 | 3.967 | 0.273 | 0.721 |
| 340 | 0.033 | 4.467 | 0.308 | 0.799 |
| 341 | 0.033 | 4.5 | 0.313 | 0.797 |
| 342 | 0.033 | 4.5 | 0.32 | 0.818 |
| 343 | 0.033 | 4.267 | 0.302 | 0.787 |
| 344 | 0.033 | 4.233 | 0.297 | 0.743 |
| 345 | 0.033 | 4.767 | 0.295 | 0.797 |
| 346 | 0.033 | 4.233 | 0.289 | 0.763 |
| 347 | 0.033 | 4.933 | 0.32 | 0.844 |
| 348 | 0.033 | 4.733 | 0.311 | 0.817 |
| 349 | 0.033 | 4.533 | 0.311 | 0.812 |
| 350 | 0.033 | 5.1 | 0.324 | 0.852 |
| 351 | 0.033 | 4.9 | 0.312 | 0.826 |
| 352 | 0.033 | 4.467 | 0.286 | 0.784 |
| 353 | 0.033 | 4.667 | 0.303 | 0.813 |
| 354 | 0.033 | 4.467 | 0.312 | 0.798 |
| 355 | 0.033 | 4.067 | 0.282 | 0.756 |
| 356 | 0.033 | 4.567 | 0.325 | 0.834 |
| 357 | 0.033 | 4.567 | 0.318 | 0.818 |
| 358 | 0.033 | 4.833 | 0.318 | 0.819 |
| 359 | 0.033 | 4.333 | 0.298 | 0.78 |
| 360 | 0.033 | 4.167 | 0.285 | 0.744 |
| 361 | 0.033 | 4.167 | 0.298 | 0.768 |
| 362 | 0.033 | 4.433 | 0.326 | 0.819 |
| 363 | 0.033 | 4.833 | 0.32 | 0.835 |
| 364 | 0.033 | 4.8 | 0.317 | 0.845 |
| 365 | 0.033 | 4.4 | 0.324 | 0.822 |
| 366 | 0.033 | 4.467 | 0.312 | 0.799 |
| 367 | 0.033 | 4.7 | 0.299 | 0.779 |
| 368 | 0.033 | 4.533 | 0.295 | 0.786 |
| 369 | 0.033 | 4.5 | 0.288 | 0.766 |
| 370 | 0.033 | 4.433 | 0.306 | 0.792 |
| 371 | 0.033 | 4.3 | 0.291 | 0.76 |
| 372 | 0.033 | 4.667 | 0.304 | 0.808 |
| 373 | 0.033 | 4.5 | 0.293 | 0.771 |
| 374 | 0.033 | 4.5 | 0.311 | 0.794 |
| 375 | 0.033 | 4.433 | 0.305 | 0.788 |
| 376 | 0.033 | 5.1 | 0.33 | 0.867 |
| 377 | 0.033 | 4.733 | 0.327 | 0.851 |
| 378 | 0.033 | 5.0 | 0.315 | 0.842 |
| 379 | 0.033 | 4.567 | 0.325 | 0.843 |
| 380 | 0.033 | 4.3 | 0.304 | 0.787 |
| 381 | 0.033 | 4.567 | 0.296 | 0.789 |
| 382 | 0.033 | 4.033 | 0.294 | 0.746 |
| 383 | 0.033 | 4.633 | 0.319 | 0.827 |
| 384 | 0.033 | 4.333 | 0.291 | 0.755 |
| 385 | 0.033 | 4.5 | 0.308 | 0.804 |
| 386 | 0.033 | 4.8 | 0.331 | 0.846 |
| 387 | 0.033 | 4.367 | 0.307 | 0.781 |
| 388 | 0.033 | 4.233 | 0.271 | 0.736 |
| 389 | 0.033 | 4.5 | 0.306 | 0.797 |
| 390 | 0.033 | 5.0 | 0.326 | 0.854 |
| 391 | 0.033 | 4.6 | 0.305 | 0.809 |
| 392 | 0.033 | 5.1 | 0.34 | 0.878 |
| 393 | 0.033 | 4.633 | 0.306 | 0.799 |
| 394 | 0.033 | 4.7 | 0.329 | 0.85 |
| 395 | 0.033 | 4.7 | 0.313 | 0.812 |
| 396 | 0.033 | 4.867 | 0.321 | 0.838 |
| 397 | 0.033 | 4.567 | 0.323 | 0.827 |
| 398 | 0.033 | 5.233 | 0.333 | 0.867 |
| 399 | 0.033 | 4.6 | 0.316 | 0.831 |
| 400 | 0.033 | 4.433 | 0.288 | 0.77 |
| 401 | 0.033 | 4.567 | 0.328 | 0.834 |
| 402 | 0.033 | 4.7 | 0.292 | 0.797 |
| 403 | 0.033 | 4.2 | 0.302 | 0.778 |
| 404 | 0.033 | 4.367 | 0.305 | 0.796 |
| 405 | 0.033 | 4.533 | 0.306 | 0.788 |
| 406 | 0.033 | 4.3 | 0.287 | 0.757 |
| 407 | 0.033 | 4.533 | 0.281 | 0.772 |
| 408 | 0.033 | 4.767 | 0.301 | 0.82 |
| 409 | 0.033 | 4.467 | 0.305 | 0.787 |
| 410 | 0.033 | 4.233 | 0.285 | 0.747 |
| 411 | 0.0 | 4.367 | 0.301 | 0.774 |
| 412 | 0.0 | 4.733 | 0.322 | 0.823 |
| 413 | 0.0 | 4.2 | 0.289 | 0.75 |
| 414 | 0.0 | 4.4 | 0.295 | 0.776 |
| 415 | 0.0 | 5.1 | 0.325 | 0.853 |
| 416 | 0.0 | 4.667 | 0.293 | 0.792 |
| 417 | 0.0 | 4.6 | 0.306 | 0.808 |
| 418 | 0.0 | 4.433 | 0.293 | 0.792 |
| 419 | 0.0 | 4.933 | 0.301 | 0.856 |
| 420 | 0.0 | 4.667 | 0.3 | 0.849 |
| 421 | 0.0 | 3.967 | 0.265 | 0.736 |
| 422 | 0.0 | 4.733 | 0.285 | 0.831 |
| 423 | 0.0 | 4.567 | 0.291 | 0.832 |
| 424 | 0.0 | 4.833 | 0.29 | 0.838 |
| 425 | 0.0 | 5.0 | 0.294 | 0.871 |
| 426 | 0.0 | 4.7 | 0.279 | 0.827 |
| 427 | 0.0 | 4.467 | 0.28 | 0.815 |
| 428 | 0.0 | 4.7 | 0.274 | 0.815 |
| 429 | 0.0 | 4.567 | 0.301 | 0.849 |
| 430 | 0.0 | 4.4 | 0.271 | 0.774 |
| 431 | 0.0 | 4.367 | 0.285 | 0.804 |
| 432 | 0.0 | 4.267 | 0.281 | 0.787 |
| 433 | 0.0 | 4.6 | 0.29 | 0.821 |
| 434 | 0.0 | 4.4 | 0.263 | 0.779 |
| 435 | 0.0 | 4.3 | 0.27 | 0.768 |
| 436 | 0.0 | 4.7 | 0.281 | 0.804 |
| 437 | 0.0 | 4.4 | 0.265 | 0.778 |
| 438 | 0.0 | 4.5 | 0.269 | 0.791 |
| 439 | 0.0 | 4.333 | 0.254 | 0.765 |
| 440 | 0.0 | 3.9 | 0.243 | 0.715 |
| 441 | 0.0 | 4.733 | 0.275 | 0.813 |
| 442 | 0.0 | 4.5 | 0.255 | 0.77 |
| 443 | 0.0 | 4.733 | 0.288 | 0.842 |
| 444 | 0.0 | 4.433 | 0.291 | 0.808 |
| 445 | 0.0 | 4.4 | 0.265 | 0.765 |
| 446 | 0.0 | 4.767 | 0.272 | 0.814 |
| 447 | 0.0 | 4.333 | 0.267 | 0.778 |
| 448 | 0.0 | 5.067 | 0.295 | 0.861 |
| 449 | 0.0 | 4.433 | 0.274 | 0.789 |
| 450 | 0.0 | 4.7 | 0.279 | 0.819 |
| 451 | 0.0 | 4.433 | 0.28 | 0.807 |
| 452 | 0.0 | 4.267 | 0.268 | 0.772 |
| 453 | 0.0 | 4.233 | 0.251 | 0.746 |
| 454 | 0.0 | 4.6 | 0.268 | 0.792 |
| 455 | 0.0 | 4.267 | 0.268 | 0.783 |
| 456 | 0.0 | 4.833 | 0.302 | 0.859 |
| 457 | 0.0 | 4.733 | 0.273 | 0.809 |
| 458 | 0.0 | 4.7 | 0.266 | 0.786 |
| 459 | 0.0 | 4.667 | 0.275 | 0.807 |
| 460 | 0.0 | 4.833 | 0.272 | 0.795 |
| 461 | 0.0 | 4.733 | 0.284 | 0.823 |
| 462 | 0.0 | 4.967 | 0.281 | 0.837 |
| 463 | 0.0 | 4.833 | 0.278 | 0.832 |
| 464 | 0.0 | 4.767 | 0.277 | 0.831 |
| 465 | 0.0 | 4.433 | 0.288 | 0.812 |
| 466 | 0.0 | 4.667 | 0.28 | 0.829 |
| 467 | 0.0 | 4.733 | 0.294 | 0.85 |
| 468 | 0.0 | 4.333 | 0.263 | 0.769 |
| 469 | 0.0 | 4.567 | 0.268 | 0.789 |
| 470 | 0.0 | 4.633 | 0.289 | 0.828 |
| 471 | 0.0 | 4.567 | 0.296 | 0.84 |
| 472 | 0.0 | 4.733 | 0.28 | 0.807 |
| 473 | 0.0 | 5.233 | 0.3 | 0.891 |
| 474 | 0.0 | 4.5 | 0.28 | 0.798 |
| 475 | 0.0 | 4.767 | 0.29 | 0.848 |
| 476 | 0.0 | 4.467 | 0.282 | 0.811 |
| 477 | 0.0 | 4.867 | 0.271 | 0.828 |
| 478 | 0.0 | 4.5 | 0.265 | 0.766 |
| 479 | 0.0 | 4.533 | 0.279 | 0.799 |
| 480 | 0.0 | 4.633 | 0.273 | 0.801 |
| 481 | 0.0 | 4.533 | 0.272 | 0.793 |
| 482 | 0.0 | 4.8 | 0.274 | 0.814 |
| 483 | 0.0 | 4.233 | 0.271 | 0.776 |
| 484 | 0.0 | 4.4 | 0.277 | 0.815 |
| 485 | 0.0 | 4.4 | 0.275 | 0.79 |
| 486 | 0.0 | 4.667 | 0.296 | 0.837 |
| 487 | 0.0 | 4.9 | 0.289 | 0.845 |
| 488 | 0.0 | 4.5 | 0.277 | 0.799 |
| 489 | 0.0 | 4.467 | 0.269 | 0.791 |
| 490 | 0.0 | 4.233 | 0.254 | 0.747 |
| 491 | 0.0 | 4.533 | 0.279 | 0.834 |
| 492 | 0.0 | 4.6 | 0.284 | 0.825 |
| 493 | 0.0 | 4.733 | 0.283 | 0.82 |
| 494 | 0.0 | 4.767 | 0.295 | 0.841 |
| 495 | 0.0 | 4.367 | 0.254 | 0.76 |
| 496 | 0.0 | 4.333 | 0.265 | 0.792 |
| 497 | 0.0 | 4.933 | 0.284 | 0.838 |
| 498 | 0.0 | 4.767 | 0.285 | 0.826 |
| 499 | 0.0 | 4.867 | 0.286 | 0.821 |
| 500 | 0.0 | 4.5 | 0.278 | 0.811 |

****

**SETTING 6**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Generation | Minimum Fitness | Maximum Fitness | Average Fitness | Standard deviation |
| 1 | 20.733 | 49.233 | 32.95 | 5.536 |
| 2 | 20.467 | 41.667 | 29.768 | 4.283 |
| 3 | 20.1 | 36.267 | 27.497 | 3.428 |
| 4 | 19.733 | 33.4 | 25.722 | 2.817 |
| 5 | 19.367 | 30.333 | 24.279 | 2.417 |
| 6 | 18.867 | 28.867 | 23.097 | 2.12 |
| 7 | 18.4 | 27.467 | 22.069 | 1.82 |
| 8 | 17.867 | 26.467 | 21.25 | 1.55 |
| 9 | 17.3 | 24.9 | 20.63 | 1.36 |
| 10 | 16.933 | 23.9 | 20.061 | 1.248 |
| 11 | 16.4 | 23.733 | 19.539 | 1.266 |
| 12 | 16.133 | 22.867 | 19.043 | 1.269 |
| 13 | 15.7 | 22.6 | 18.538 | 1.264 |
| 14 | 15.233 | 22.433 | 18.047 | 1.288 |
| 15 | 14.8 | 21.5 | 17.542 | 1.209 |
| 16 | 14.3 | 21.233 | 17.103 | 1.2 |
| 17 | 13.833 | 20.733 | 16.658 | 1.181 |
| 18 | 13.567 | 20.1 | 16.241 | 1.167 |
| 19 | 13.133 | 20.033 | 15.822 | 1.169 |
| 20 | 12.9 | 19.533 | 15.419 | 1.155 |
| 21 | 12.667 | 19.567 | 15.048 | 1.174 |
| 22 | 12.4 | 18.533 | 14.663 | 1.13 |
| 23 | 12.067 | 18.033 | 14.266 | 1.079 |
| 24 | 11.633 | 18.167 | 13.953 | 1.136 |
| 25 | 11.333 | 17.133 | 13.551 | 1.051 |
| 26 | 11.033 | 16.767 | 13.193 | 1.016 |
| 27 | 10.833 | 16.7 | 12.865 | 0.992 |
| 28 | 10.4 | 16.433 | 12.616 | 1.019 |
| 29 | 10.233 | 15.767 | 12.329 | 0.995 |
| 30 | 9.967 | 16.0 | 12.048 | 1.053 |
| 31 | 9.633 | 15.5 | 11.717 | 1.038 |
| 32 | 9.533 | 15.133 | 11.392 | 1.03 |
| 33 | 9.4 | 15.0 | 11.11 | 1.007 |
| 34 | 9.1 | 14.367 | 10.816 | 0.966 |
| 35 | 8.8 | 14.4 | 10.559 | 0.959 |
| 36 | 8.667 | 13.9 | 10.309 | 0.928 |
| 37 | 8.5 | 14.033 | 10.068 | 0.934 |
| 38 | 8.267 | 13.467 | 9.861 | 0.907 |
| 39 | 7.967 | 13.3 | 9.68 | 0.916 |
| 40 | 7.867 | 13.267 | 9.474 | 0.931 |
| 41 | 7.633 | 13.167 | 9.241 | 0.919 |
| 42 | 7.5 | 12.333 | 9.038 | 0.881 |
| 43 | 7.433 | 12.3 | 8.876 | 0.881 |
| 44 | 7.233 | 12.367 | 8.717 | 0.934 |
| 45 | 6.9 | 12.167 | 8.507 | 0.907 |
| 46 | 6.733 | 12.2 | 8.34 | 0.91 |
| 47 | 6.7 | 11.833 | 8.174 | 0.906 |
| 48 | 6.467 | 11.6 | 7.999 | 0.896 |
| 49 | 6.333 | 11.433 | 7.807 | 0.873 |
| 50 | 6.1 | 11.367 | 7.655 | 0.901 |
| 51 | 5.967 | 10.933 | 7.491 | 0.923 |
| 52 | 5.733 | 10.8 | 7.275 | 0.895 |
| 53 | 5.667 | 10.867 | 7.117 | 0.928 |
| 54 | 5.533 | 10.767 | 6.946 | 0.903 |
| 55 | 5.467 | 10.533 | 6.783 | 0.872 |
| 56 | 5.367 | 10.467 | 6.654 | 0.927 |
| 57 | 5.233 | 10.067 | 6.48 | 0.875 |
| 58 | 5.0 | 9.967 | 6.335 | 0.882 |
| 59 | 4.767 | 9.667 | 6.177 | 0.887 |
| 60 | 4.767 | 9.633 | 6.003 | 0.877 |
| 61 | 4.733 | 9.567 | 5.858 | 0.866 |
| 62 | 4.533 | 9.067 | 5.711 | 0.838 |
| 63 | 4.433 | 9.267 | 5.625 | 0.894 |
| 64 | 4.233 | 8.8 | 5.482 | 0.837 |
| 65 | 4.167 | 8.7 | 5.36 | 0.833 |
| 66 | 3.933 | 8.8 | 5.243 | 0.87 |
| 67 | 3.933 | 8.933 | 5.122 | 0.862 |
| 68 | 3.833 | 9.133 | 5.031 | 0.902 |
| 69 | 3.633 | 8.633 | 4.927 | 0.866 |
| 70 | 3.633 | 8.833 | 4.824 | 0.867 |
| 71 | 3.533 | 8.2 | 4.701 | 0.849 |
| 72 | 3.533 | 8.133 | 4.6 | 0.884 |
| 73 | 3.433 | 8.0 | 4.465 | 0.859 |
| 74 | 3.267 | 7.9 | 4.363 | 0.867 |
| 75 | 3.233 | 8.3 | 4.27 | 0.888 |
| 76 | 3.2 | 7.833 | 4.164 | 0.867 |
| 77 | 3.033 | 7.7 | 4.059 | 0.84 |
| 78 | 2.967 | 7.567 | 3.991 | 0.828 |
| 79 | 2.867 | 7.467 | 3.901 | 0.841 |
| 80 | 2.733 | 7.5 | 3.806 | 0.84 |
| 81 | 2.633 | 6.967 | 3.711 | 0.809 |
| 82 | 2.633 | 7.3 | 3.638 | 0.854 |
| 83 | 2.5 | 7.267 | 3.543 | 0.865 |
| 84 | 2.467 | 7.367 | 3.456 | 0.878 |
| 85 | 2.333 | 7.067 | 3.416 | 0.926 |
| 86 | 2.3 | 6.6 | 3.255 | 0.828 |
| 87 | 2.233 | 6.933 | 3.189 | 0.879 |
| 88 | 2.167 | 6.8 | 3.114 | 0.878 |
| 89 | 2.167 | 6.567 | 3.015 | 0.843 |
| 90 | 1.967 | 6.433 | 2.933 | 0.821 |
| 91 | 1.967 | 6.433 | 2.877 | 0.852 |
| 92 | 1.933 | 6.533 | 2.829 | 0.875 |
| 93 | 1.9 | 6.233 | 2.73 | 0.85 |
| 94 | 1.8 | 6.333 | 2.638 | 0.838 |
| 95 | 1.767 | 6.267 | 2.585 | 0.865 |
| 96 | 1.733 | 6.2 | 2.52 | 0.854 |
| 97 | 1.733 | 6.133 | 2.465 | 0.86 |
| 98 | 1.6 | 6.0 | 2.403 | 0.813 |
| 99 | 1.5 | 6.333 | 2.396 | 0.89 |
| 100 | 1.433 | 5.8 | 2.335 | 0.838 |
| 101 | 1.433 | 5.9 | 2.278 | 0.834 |
| 102 | 1.4 | 5.833 | 2.202 | 0.81 |
| 103 | 1.333 | 5.5 | 2.137 | 0.805 |
| 104 | 1.267 | 5.767 | 2.095 | 0.827 |
| 105 | 1.267 | 5.667 | 2.037 | 0.855 |
| 106 | 1.167 | 5.633 | 1.983 | 0.853 |
| 107 | 1.2 | 5.767 | 1.93 | 0.855 |
| 108 | 1.1 | 5.267 | 1.872 | 0.821 |
| 109 | 1.033 | 5.1 | 1.818 | 0.814 |
| 110 | 1.033 | 5.367 | 1.758 | 0.814 |
| 111 | 0.9 | 5.3 | 1.712 | 0.831 |
| 112 | 0.9 | 5.267 | 1.647 | 0.797 |
| 113 | 0.9 | 5.233 | 1.631 | 0.824 |
| 114 | 0.867 | 5.267 | 1.591 | 0.853 |
| 115 | 0.833 | 5.067 | 1.519 | 0.82 |
| 116 | 0.8 | 4.867 | 1.488 | 0.834 |
| 117 | 0.733 | 5.067 | 1.442 | 0.834 |
| 118 | 0.7 | 5.167 | 1.418 | 0.86 |
| 119 | 0.633 | 4.667 | 1.338 | 0.789 |
| 120 | 0.567 | 5.233 | 1.327 | 0.85 |
| 121 | 0.6 | 5.267 | 1.303 | 0.865 |
| 122 | 0.533 | 4.633 | 1.216 | 0.794 |
| 123 | 0.533 | 4.767 | 1.235 | 0.843 |
| 124 | 0.5 | 4.9 | 1.192 | 0.859 |
| 125 | 0.467 | 4.833 | 1.132 | 0.818 |
| 126 | 0.433 | 4.533 | 1.098 | 0.836 |
| 127 | 0.4 | 4.733 | 1.058 | 0.844 |
| 128 | 0.3 | 4.567 | 1.027 | 0.835 |
| 129 | 0.333 | 4.3 | 0.955 | 0.79 |
| 130 | 0.333 | 4.533 | 0.93 | 0.83 |
| 131 | 0.333 | 4.5 | 0.893 | 0.831 |
| 132 | 0.333 | 4.233 | 0.855 | 0.817 |
| 133 | 0.267 | 4.167 | 0.806 | 0.804 |
| 134 | 0.267 | 4.533 | 0.798 | 0.852 |
| 135 | 0.233 | 4.3 | 0.761 | 0.83 |
| 136 | 0.233 | 4.3 | 0.72 | 0.824 |
| 137 | 0.233 | 4.1 | 0.686 | 0.801 |
| 138 | 0.2 | 4.0 | 0.665 | 0.787 |
| 139 | 0.2 | 4.033 | 0.655 | 0.786 |
| 140 | 0.133 | 4.333 | 0.643 | 0.819 |
| 141 | 0.133 | 4.067 | 0.638 | 0.823 |
| 142 | 0.133 | 4.3 | 0.622 | 0.826 |
| 143 | 0.133 | 4.5 | 0.608 | 0.841 |
| 144 | 0.133 | 4.3 | 0.589 | 0.811 |
| 145 | 0.133 | 4.733 | 0.625 | 0.909 |
| 146 | 0.133 | 4.667 | 0.591 | 0.878 |
| 147 | 0.1 | 4.3 | 0.57 | 0.845 |
| 148 | 0.1 | 4.133 | 0.553 | 0.829 |
| 149 | 0.067 | 4.233 | 0.541 | 0.842 |
| 150 | 0.033 | 4.233 | 0.529 | 0.832 |
| 151 | 0.033 | 4.367 | 0.52 | 0.846 |
| 152 | 0.033 | 4.2 | 0.503 | 0.824 |
| 153 | 0.033 | 4.233 | 0.486 | 0.805 |
| 154 | 0.033 | 4.2 | 0.511 | 0.845 |
| 155 | 0.033 | 4.1 | 0.497 | 0.838 |
| 156 | 0.033 | 4.0 | 0.49 | 0.812 |
| 157 | 0.033 | 3.767 | 0.456 | 0.789 |
| 158 | 0.033 | 4.233 | 0.479 | 0.836 |
| 159 | 0.033 | 4.067 | 0.451 | 0.827 |
| 160 | 0.0 | 4.1 | 0.436 | 0.805 |
| 161 | 0.0 | 4.167 | 0.442 | 0.824 |
| 162 | 0.0 | 4.033 | 0.433 | 0.819 |
| 163 | 0.0 | 4.4 | 0.449 | 0.862 |
| 164 | 0.0 | 4.267 | 0.45 | 0.868 |
| 165 | 0.0 | 3.967 | 0.406 | 0.802 |
| 166 | 0.0 | 3.633 | 0.39 | 0.781 |
| 167 | 0.0 | 3.667 | 0.362 | 0.754 |
| 168 | 0.0 | 4.167 | 0.397 | 0.835 |
| 169 | 0.0 | 3.733 | 0.379 | 0.801 |
| 170 | 0.0 | 4.0 | 0.371 | 0.809 |
| 171 | 0.0 | 4.3 | 0.37 | 0.819 |
| 172 | 0.0 | 4.067 | 0.361 | 0.805 |
| 173 | 0.0 | 3.867 | 0.349 | 0.772 |
| 174 | 0.0 | 3.9 | 0.367 | 0.804 |
| 175 | 0.0 | 3.8 | 0.357 | 0.786 |
| 176 | 0.0 | 3.867 | 0.37 | 0.807 |
| 177 | 0.0 | 3.933 | 0.38 | 0.815 |
| 178 | 0.0 | 4.3 | 0.415 | 0.863 |
| 179 | 0.0 | 3.933 | 0.372 | 0.793 |
| 180 | 0.0 | 3.667 | 0.364 | 0.792 |
| 181 | 0.0 | 4.1 | 0.387 | 0.845 |
| 182 | 0.0 | 3.767 | 0.357 | 0.778 |
| 183 | 0.0 | 4.267 | 0.406 | 0.859 |
| 184 | 0.0 | 4.133 | 0.394 | 0.835 |
| 185 | 0.0 | 3.867 | 0.384 | 0.818 |
| 186 | 0.0 | 4.067 | 0.371 | 0.81 |
| 187 | 0.0 | 4.0 | 0.377 | 0.809 |
| 188 | 0.0 | 3.767 | 0.347 | 0.777 |
| 189 | 0.0 | 4.067 | 0.373 | 0.818 |
| 190 | 0.0 | 3.5 | 0.352 | 0.758 |
| 191 | 0.0 | 3.867 | 0.372 | 0.808 |
| 192 | 0.0 | 4.033 | 0.377 | 0.822 |
| 193 | 0.0 | 3.867 | 0.364 | 0.786 |
| 194 | 0.0 | 3.967 | 0.374 | 0.802 |
| 195 | 0.0 | 3.867 | 0.376 | 0.808 |
| 196 | 0.0 | 3.767 | 0.374 | 0.805 |
| 197 | 0.0 | 3.8 | 0.344 | 0.765 |
| 198 | 0.0 | 4.2 | 0.406 | 0.851 |
| 199 | 0.0 | 4.1 | 0.376 | 0.81 |
| 200 | 0.0 | 4.1 | 0.369 | 0.811 |
| 201 | 0.0 | 4.0 | 0.367 | 0.807 |
| 202 | 0.0 | 3.933 | 0.368 | 0.8 |
| 203 | 0.0 | 3.967 | 0.369 | 0.809 |
| 204 | 0.0 | 3.9 | 0.372 | 0.822 |
| 205 | 0.0 | 4.1 | 0.388 | 0.827 |
| 206 | 0.0 | 4.0 | 0.376 | 0.818 |
| 207 | 0.0 | 4.133 | 0.386 | 0.829 |
| 208 | 0.0 | 4.467 | 0.391 | 0.85 |
| 209 | 0.0 | 3.833 | 0.362 | 0.792 |
| 210 | 0.0 | 4.0 | 0.401 | 0.839 |
| 211 | 0.0 | 4.0 | 0.372 | 0.817 |
| 212 | 0.0 | 4.067 | 0.383 | 0.808 |
| 213 | 0.0 | 4.1 | 0.39 | 0.83 |
| 214 | 0.0 | 3.8 | 0.363 | 0.788 |
| 215 | 0.0 | 3.7 | 0.343 | 0.762 |
| 216 | 0.0 | 4.0 | 0.343 | 0.792 |
| 217 | 0.0 | 3.967 | 0.358 | 0.791 |
| 218 | 0.0 | 4.133 | 0.392 | 0.84 |
| 219 | 0.0 | 3.933 | 0.369 | 0.804 |
| 220 | 0.0 | 3.867 | 0.373 | 0.792 |
| 221 | 0.0 | 3.9 | 0.383 | 0.803 |
| 222 | 0.0 | 3.833 | 0.37 | 0.799 |
| 223 | 0.0 | 4.133 | 0.369 | 0.816 |
| 224 | 0.0 | 4.0 | 0.363 | 0.801 |
| 225 | 0.0 | 4.167 | 0.372 | 0.826 |
| 226 | 0.0 | 4.433 | 0.384 | 0.841 |
| 227 | 0.0 | 3.833 | 0.346 | 0.768 |
| 228 | 0.0 | 4.0 | 0.377 | 0.815 |
| 229 | 0.0 | 4.033 | 0.358 | 0.793 |
| 230 | 0.0 | 4.067 | 0.399 | 0.851 |
| 231 | 0.0 | 3.967 | 0.37 | 0.807 |
| 232 | 0.0 | 4.0 | 0.364 | 0.8 |
| 233 | 0.0 | 3.667 | 0.373 | 0.789 |
| 234 | 0.0 | 4.1 | 0.375 | 0.807 |
| 235 | 0.0 | 3.7 | 0.389 | 0.817 |
| 236 | 0.0 | 3.967 | 0.375 | 0.815 |
| 237 | 0.0 | 3.967 | 0.389 | 0.811 |
| 238 | 0.0 | 3.5 | 0.359 | 0.767 |
| 239 | 0.0 | 4.067 | 0.353 | 0.801 |
| 240 | 0.0 | 4.233 | 0.357 | 0.805 |
| 241 | 0.0 | 3.9 | 0.395 | 0.836 |
| 242 | 0.0 | 3.967 | 0.389 | 0.816 |
| 243 | 0.0 | 4.267 | 0.407 | 0.867 |
| 244 | 0.0 | 4.0 | 0.374 | 0.797 |
| 245 | 0.0 | 4.033 | 0.351 | 0.796 |
| 246 | 0.0 | 3.633 | 0.363 | 0.781 |
| 247 | 0.0 | 4.3 | 0.372 | 0.817 |
| 248 | 0.0 | 3.7 | 0.365 | 0.79 |
| 249 | 0.0 | 3.933 | 0.361 | 0.801 |
| 250 | 0.0 | 4.0 | 0.361 | 0.793 |
| 251 | 0.0 | 3.833 | 0.369 | 0.791 |
| 252 | 0.0 | 4.1 | 0.385 | 0.842 |
| 253 | 0.0 | 3.567 | 0.351 | 0.757 |
| 254 | 0.0 | 4.167 | 0.379 | 0.826 |
| 255 | 0.0 | 4.133 | 0.362 | 0.82 |
| 256 | 0.0 | 3.9 | 0.373 | 0.803 |
| 257 | 0.0 | 3.7 | 0.373 | 0.792 |
| 258 | 0.0 | 4.1 | 0.343 | 0.789 |
| 259 | 0.0 | 4.033 | 0.328 | 0.769 |
| 260 | 0.0 | 3.967 | 0.383 | 0.839 |
| 261 | 0.0 | 4.1 | 0.367 | 0.806 |
| 262 | 0.0 | 3.567 | 0.336 | 0.744 |
| 263 | 0.0 | 4.067 | 0.393 | 0.833 |
| 264 | 0.0 | 4.033 | 0.373 | 0.808 |
| 265 | 0.0 | 3.8 | 0.372 | 0.801 |
| 266 | 0.0 | 3.833 | 0.385 | 0.817 |
| 267 | 0.0 | 4.033 | 0.39 | 0.823 |
| 268 | 0.0 | 3.933 | 0.38 | 0.805 |
| 269 | 0.0 | 4.233 | 0.382 | 0.825 |
| 270 | 0.0 | 3.833 | 0.367 | 0.787 |
| 271 | 0.0 | 4.167 | 0.363 | 0.822 |
| 272 | 0.0 | 4.167 | 0.378 | 0.838 |
| 273 | 0.0 | 4.067 | 0.38 | 0.824 |
| 274 | 0.0 | 4.4 | 0.367 | 0.824 |
| 275 | 0.0 | 3.6 | 0.369 | 0.787 |
| 276 | 0.0 | 3.8 | 0.375 | 0.808 |
| 277 | 0.0 | 3.7 | 0.383 | 0.806 |
| 278 | 0.0 | 3.9 | 0.369 | 0.792 |
| 279 | 0.0 | 4.233 | 0.371 | 0.806 |
| 280 | 0.0 | 4.233 | 0.358 | 0.807 |
| 281 | 0.0 | 4.133 | 0.389 | 0.841 |
| 282 | 0.0 | 3.8 | 0.365 | 0.788 |
| 283 | 0.0 | 3.733 | 0.386 | 0.818 |
| 284 | 0.0 | 4.167 | 0.395 | 0.866 |
| 285 | 0.0 | 3.933 | 0.377 | 0.798 |
| 286 | 0.0 | 4.167 | 0.378 | 0.822 |
| 287 | 0.0 | 4.367 | 0.398 | 0.854 |
| 288 | 0.0 | 4.2 | 0.364 | 0.812 |
| 289 | 0.0 | 3.867 | 0.372 | 0.799 |
| 290 | 0.0 | 4.133 | 0.396 | 0.84 |
| 291 | 0.0 | 4.033 | 0.393 | 0.821 |
| 292 | 0.0 | 3.967 | 0.39 | 0.823 |
| 293 | 0.0 | 4.0 | 0.392 | 0.84 |
| 294 | 0.0 | 3.733 | 0.364 | 0.779 |
| 295 | 0.0 | 4.067 | 0.391 | 0.83 |
| 296 | 0.0 | 4.633 | 0.396 | 0.87 |
| 297 | 0.0 | 4.033 | 0.384 | 0.826 |
| 298 | 0.0 | 4.0 | 0.355 | 0.785 |
| 299 | 0.0 | 3.967 | 0.339 | 0.791 |
| 300 | 0.0 | 3.967 | 0.358 | 0.803 |
| 301 | 0.0 | 3.833 | 0.365 | 0.799 |
| 302 | 0.0 | 3.967 | 0.37 | 0.81 |
| 303 | 0.0 | 4.133 | 0.367 | 0.81 |
| 304 | 0.0 | 4.0 | 0.376 | 0.823 |
| 305 | 0.0 | 3.933 | 0.393 | 0.838 |
| 306 | 0.0 | 4.033 | 0.376 | 0.825 |
| 307 | 0.0 | 4.067 | 0.392 | 0.838 |
| 308 | 0.0 | 3.9 | 0.365 | 0.799 |
| 309 | 0.0 | 4.2 | 0.399 | 0.846 |
| 310 | 0.0 | 4.133 | 0.398 | 0.847 |
| 311 | 0.0 | 4.067 | 0.403 | 0.825 |
| 312 | 0.0 | 3.967 | 0.377 | 0.805 |
| 313 | 0.0 | 4.1 | 0.41 | 0.843 |
| 314 | 0.0 | 4.0 | 0.374 | 0.811 |
| 315 | 0.0 | 3.867 | 0.369 | 0.8 |
| 316 | 0.0 | 4.133 | 0.385 | 0.838 |
| 317 | 0.0 | 3.7 | 0.349 | 0.769 |
| 318 | 0.0 | 3.9 | 0.354 | 0.786 |
| 319 | 0.0 | 4.2 | 0.386 | 0.827 |
| 320 | 0.0 | 3.767 | 0.357 | 0.774 |
| 321 | 0.0 | 4.033 | 0.376 | 0.815 |
| 322 | 0.0 | 4.033 | 0.369 | 0.816 |
| 323 | 0.0 | 3.933 | 0.36 | 0.805 |
| 324 | 0.0 | 4.2 | 0.381 | 0.828 |
| 325 | 0.0 | 3.9 | 0.375 | 0.801 |
| 326 | 0.0 | 4.067 | 0.38 | 0.821 |
| 327 | 0.0 | 3.967 | 0.387 | 0.828 |
| 328 | 0.0 | 4.0 | 0.364 | 0.798 |
| 329 | 0.0 | 3.967 | 0.352 | 0.79 |
| 330 | 0.0 | 3.533 | 0.336 | 0.756 |
| 331 | 0.0 | 3.9 | 0.362 | 0.806 |
| 332 | 0.0 | 4.267 | 0.383 | 0.831 |
| 333 | 0.0 | 3.933 | 0.379 | 0.808 |
| 334 | 0.0 | 4.3 | 0.392 | 0.856 |
| 335 | 0.0 | 3.9 | 0.369 | 0.804 |
| 336 | 0.0 | 4.0 | 0.375 | 0.824 |
| 337 | 0.0 | 3.567 | 0.363 | 0.778 |
| 338 | 0.0 | 4.033 | 0.385 | 0.827 |
| 339 | 0.0 | 4.0 | 0.376 | 0.81 |
| 340 | 0.0 | 3.567 | 0.345 | 0.76 |
| 341 | 0.0 | 3.867 | 0.364 | 0.802 |
| 342 | 0.0 | 4.233 | 0.385 | 0.842 |
| 343 | 0.0 | 3.8 | 0.379 | 0.809 |
| 344 | 0.0 | 3.833 | 0.348 | 0.775 |
| 345 | 0.0 | 3.667 | 0.35 | 0.772 |
| 346 | 0.0 | 4.1 | 0.384 | 0.822 |
| 347 | 0.0 | 3.733 | 0.36 | 0.789 |
| 348 | 0.0 | 4.0 | 0.387 | 0.815 |
| 349 | 0.0 | 4.1 | 0.391 | 0.835 |
| 350 | 0.0 | 3.933 | 0.395 | 0.825 |
| 351 | 0.0 | 4.0 | 0.393 | 0.825 |
| 352 | 0.0 | 3.833 | 0.385 | 0.816 |
| 353 | 0.0 | 3.967 | 0.385 | 0.822 |
| 354 | 0.0 | 3.467 | 0.353 | 0.754 |
| 355 | 0.0 | 4.433 | 0.407 | 0.87 |
| 356 | 0.0 | 4.167 | 0.378 | 0.823 |
| 357 | 0.0 | 4.067 | 0.368 | 0.811 |
| 358 | 0.0 | 4.133 | 0.371 | 0.831 |
| 359 | 0.0 | 3.9 | 0.361 | 0.799 |
| 360 | 0.0 | 3.933 | 0.358 | 0.807 |
| 361 | 0.0 | 3.933 | 0.343 | 0.79 |
| 362 | 0.0 | 3.833 | 0.357 | 0.791 |
| 363 | 0.0 | 4.1 | 0.388 | 0.834 |
| 364 | 0.0 | 3.933 | 0.375 | 0.806 |
| 365 | 0.0 | 3.933 | 0.357 | 0.789 |
| 366 | 0.0 | 3.933 | 0.367 | 0.795 |
| 367 | 0.0 | 3.7 | 0.367 | 0.797 |
| 368 | 0.0 | 4.233 | 0.388 | 0.838 |
| 369 | 0.0 | 3.967 | 0.368 | 0.8 |
| 370 | 0.0 | 3.967 | 0.377 | 0.807 |
| 371 | 0.0 | 3.8 | 0.372 | 0.801 |
| 372 | 0.0 | 3.9 | 0.386 | 0.82 |
| 373 | 0.0 | 4.167 | 0.387 | 0.84 |
| 374 | 0.0 | 3.667 | 0.363 | 0.774 |
| 375 | 0.0 | 4.1 | 0.382 | 0.828 |
| 376 | 0.0 | 4.2 | 0.361 | 0.802 |
| 377 | 0.0 | 3.967 | 0.362 | 0.804 |
| 378 | 0.0 | 4.1 | 0.409 | 0.858 |
| 379 | 0.0 | 3.9 | 0.382 | 0.813 |
| 380 | 0.0 | 4.3 | 0.401 | 0.845 |
| 381 | 0.0 | 4.1 | 0.35 | 0.794 |
| 382 | 0.0 | 3.8 | 0.357 | 0.778 |
| 383 | 0.0 | 3.9 | 0.373 | 0.804 |
| 384 | 0.0 | 3.8 | 0.358 | 0.788 |
| 385 | 0.0 | 3.9 | 0.351 | 0.785 |
| 386 | 0.0 | 3.7 | 0.382 | 0.797 |
| 387 | 0.0 | 3.933 | 0.4 | 0.821 |
| 388 | 0.0 | 4.333 | 0.37 | 0.827 |
| 389 | 0.0 | 3.9 | 0.344 | 0.776 |
| 390 | 0.0 | 3.767 | 0.349 | 0.783 |
| 391 | 0.0 | 3.933 | 0.38 | 0.824 |
| 392 | 0.0 | 3.667 | 0.381 | 0.812 |
| 393 | 0.0 | 3.633 | 0.367 | 0.793 |
| 394 | 0.0 | 3.967 | 0.395 | 0.836 |
| 395 | 0.0 | 3.9 | 0.368 | 0.811 |
| 396 | 0.0 | 4.4 | 0.371 | 0.833 |
| 397 | 0.0 | 4.2 | 0.388 | 0.839 |
| 398 | 0.0 | 3.8 | 0.372 | 0.796 |
| 399 | 0.0 | 3.933 | 0.372 | 0.794 |
| 400 | 0.0 | 4.133 | 0.396 | 0.818 |
| 401 | 0.0 | 4.0 | 0.411 | 0.832 |
| 402 | 0.0 | 4.6 | 0.408 | 0.87 |
| 403 | 0.0 | 4.2 | 0.38 | 0.834 |
| 404 | 0.0 | 3.9 | 0.379 | 0.802 |
| 405 | 0.0 | 3.567 | 0.354 | 0.767 |
| 406 | 0.0 | 3.867 | 0.38 | 0.818 |
| 407 | 0.0 | 4.033 | 0.364 | 0.814 |
| 408 | 0.0 | 3.833 | 0.348 | 0.779 |
| 409 | 0.0 | 3.967 | 0.386 | 0.827 |
| 410 | 0.0 | 3.867 | 0.331 | 0.751 |
| 411 | 0.0 | 3.833 | 0.347 | 0.773 |
| 412 | 0.0 | 4.067 | 0.38 | 0.815 |
| 413 | 0.0 | 3.8 | 0.401 | 0.828 |
| 414 | 0.0 | 3.933 | 0.367 | 0.789 |
| 415 | 0.0 | 3.633 | 0.38 | 0.788 |
| 416 | 0.0 | 4.033 | 0.376 | 0.815 |
| 417 | 0.0 | 4.067 | 0.405 | 0.853 |
| 418 | 0.0 | 4.067 | 0.399 | 0.839 |
| 419 | 0.0 | 3.867 | 0.346 | 0.771 |
| 420 | 0.0 | 3.8 | 0.351 | 0.778 |
| 421 | 0.0 | 4.4 | 0.38 | 0.832 |
| 422 | 0.0 | 3.733 | 0.358 | 0.781 |
| 423 | 0.0 | 3.967 | 0.372 | 0.806 |
| 424 | 0.0 | 3.9 | 0.378 | 0.802 |
| 425 | 0.0 | 4.1 | 0.38 | 0.817 |
| 426 | 0.0 | 3.567 | 0.362 | 0.779 |
| 427 | 0.0 | 3.9 | 0.367 | 0.809 |
| 428 | 0.0 | 3.833 | 0.362 | 0.791 |
| 429 | 0.0 | 4.0 | 0.379 | 0.826 |
| 430 | 0.0 | 3.967 | 0.375 | 0.808 |
| 431 | 0.0 | 4.0 | 0.344 | 0.771 |
| 432 | 0.0 | 3.933 | 0.378 | 0.811 |
| 433 | 0.0 | 3.667 | 0.35 | 0.769 |
| 434 | 0.0 | 3.733 | 0.356 | 0.784 |
| 435 | 0.0 | 4.167 | 0.373 | 0.821 |
| 436 | 0.0 | 4.1 | 0.369 | 0.821 |
| 437 | 0.0 | 4.333 | 0.391 | 0.858 |
| 438 | 0.0 | 3.6 | 0.354 | 0.76 |
| 439 | 0.0 | 3.9 | 0.346 | 0.777 |
| 440 | 0.0 | 3.833 | 0.343 | 0.767 |
| 441 | 0.0 | 3.967 | 0.352 | 0.79 |
| 442 | 0.0 | 4.2 | 0.366 | 0.815 |
| 443 | 0.0 | 4.0 | 0.364 | 0.798 |
| 444 | 0.0 | 3.9 | 0.367 | 0.797 |
| 445 | 0.0 | 3.8 | 0.362 | 0.784 |
| 446 | 0.0 | 4.033 | 0.387 | 0.827 |
| 447 | 0.0 | 3.933 | 0.367 | 0.79 |
| 448 | 0.0 | 4.033 | 0.366 | 0.809 |
| 449 | 0.0 | 4.1 | 0.366 | 0.807 |
| 450 | 0.0 | 3.867 | 0.361 | 0.786 |
| 451 | 0.0 | 4.133 | 0.397 | 0.848 |
| 452 | 0.0 | 3.8 | 0.371 | 0.808 |
| 453 | 0.0 | 4.333 | 0.374 | 0.821 |
| 454 | 0.0 | 3.833 | 0.351 | 0.765 |
| 455 | 0.0 | 3.433 | 0.344 | 0.741 |
| 456 | 0.0 | 3.867 | 0.364 | 0.797 |
| 457 | 0.0 | 3.867 | 0.383 | 0.807 |
| 458 | 0.0 | 3.933 | 0.356 | 0.791 |
| 459 | 0.0 | 3.967 | 0.348 | 0.782 |
| 460 | 0.0 | 3.967 | 0.38 | 0.812 |
| 461 | 0.0 | 4.333 | 0.399 | 0.852 |
| 462 | 0.0 | 4.167 | 0.405 | 0.842 |
| 463 | 0.0 | 3.967 | 0.374 | 0.808 |
| 464 | 0.0 | 3.8 | 0.367 | 0.795 |
| 465 | 0.0 | 3.833 | 0.389 | 0.813 |
| 466 | 0.0 | 3.867 | 0.37 | 0.799 |
| 467 | 0.0 | 3.9 | 0.377 | 0.808 |
| 468 | 0.0 | 4.067 | 0.367 | 0.814 |
| 469 | 0.0 | 4.067 | 0.365 | 0.801 |
| 470 | 0.0 | 4.2 | 0.389 | 0.82 |
| 471 | 0.0 | 4.167 | 0.386 | 0.831 |
| 472 | 0.0 | 4.1 | 0.387 | 0.828 |
| 473 | 0.0 | 3.833 | 0.397 | 0.825 |
| 474 | 0.0 | 3.9 | 0.369 | 0.791 |
| 475 | 0.0 | 4.167 | 0.388 | 0.833 |
| 476 | 0.0 | 4.133 | 0.364 | 0.814 |
| 477 | 0.0 | 3.8 | 0.356 | 0.793 |
| 478 | 0.0 | 3.867 | 0.383 | 0.81 |
| 479 | 0.0 | 4.1 | 0.386 | 0.826 |
| 480 | 0.0 | 3.833 | 0.366 | 0.795 |
| 481 | 0.0 | 4.267 | 0.381 | 0.845 |
| 482 | 0.0 | 3.9 | 0.376 | 0.802 |
| 483 | 0.0 | 3.8 | 0.38 | 0.812 |
| 484 | 0.0 | 3.833 | 0.367 | 0.796 |
| 485 | 0.0 | 4.0 | 0.394 | 0.838 |
| 486 | 0.0 | 4.167 | 0.404 | 0.859 |
| 487 | 0.0 | 3.8 | 0.373 | 0.789 |
| 488 | 0.0 | 3.867 | 0.38 | 0.821 |
| 489 | 0.0 | 4.0 | 0.398 | 0.833 |
| 490 | 0.0 | 4.0 | 0.387 | 0.816 |
| 491 | 0.0 | 4.067 | 0.374 | 0.814 |
| 492 | 0.0 | 4.133 | 0.383 | 0.83 |
| 493 | 0.0 | 3.8 | 0.393 | 0.822 |
| 494 | 0.0 | 4.267 | 0.387 | 0.839 |
| 495 | 0.0 | 3.833 | 0.382 | 0.807 |
| 496 | 0.0 | 3.667 | 0.361 | 0.778 |
| 497 | 0.0 | 3.8 | 0.348 | 0.778 |
| 498 | 0.0 | 4.133 | 0.372 | 0.823 |
| 499 | 0.0 | 3.867 | 0.377 | 0.815 |
| 500 | 0.0 | 4.167 | 0.372 | 0.817 |

****

**Q5:** The setting that gives the best solution is the one that gives the best fitness value for the last generation. For one particular full execution of the program (30 iterations), the best setting is hence setting 4 which gives a last population fitness average of 0.149.

**Q6:**

**Setting 1**

No hit occurred for any of the 30 runs therefore there is no optimal solution

|  |  |  |
| --- | --- | --- |
| **Min Hit Count** | **Max Hit Count** | **Average Hit Count** |
| 0 | 0 | 0 |
|  |  |  |
| **Min Hit Rate** | **Max Hit Rate** | **Average Hit Rate** |
| 0 | 0 | 0 |

**Setting 2**

2nd setting 3 minimum hit occurred for 30 runs which resulted in a minimum hit rate of 16.67%. The max and average hit counts of 1 after 30 runs which is a 3.34% hit rate.

|  |  |  |
| --- | --- | --- |
| **Min Hit Count** | **Max Hit Count** | **Average Hit Count** |
| 3 | 1 | 1 |
|  |  |  |
| **Min Hit Rate** | **Max Hit Rate** | **Average Hit Rate** |
| 16.67% | 3.34% | 3.34 |

**Setting 3**

3rd setting had 30 minimum hit occurred for 30 runs which resulted in a minimum hit rate of 100%. The max and average hit counts were 0 after 30 runs which is a 0% hit rate.

|  |  |  |
| --- | --- | --- |
| **Min Hit Count** | **Max Hit Count** | **Average Hit Count** |
| 30 | 0 | 0 |
|  |  |  |
| **Min Hit Rate** | **Max Hit Rate** | **Average Hit Rate** |
| 100% | 0% | 0% |

**Setting 4**

4th setting had 30 minimum hit occurred for 30 runs which resulted in a minimum hit rate of 100%. The max and average hit counts were 0 after 30 runs which is a 0% hit rate.

|  |  |  |
| --- | --- | --- |
| **Min Hit Count** | **Max Hit Count** | **Average Hit Count** |
| 30 | 0 | 0 |
|  |  |  |
| **Min Hit Rate** | **Max Hit Rate** | **Average Hit Rate** |
| 100% | 0% | 0% |

**Setting 5**

5th setting had 30 minimum hit occurred for 30 runs which resulted in a minimum hit rate of 100%. The max and average hit counts were 0 after 30 runs which is a 0% hit rate.

|  |  |  |
| --- | --- | --- |
| **Min Hit Count** | **Max Hit Count** | **Average Hit Count** |
| 30 | 0 | 0 |
|  |  |  |
| **Min Hit Rate** | **Max Hit Rate** | **Average Hit Rate** |
| 100% | 0% | 0% |

**Setting 6**

|  |  |  |
| --- | --- | --- |
| **Min Hit Count** | **Max Hit Count** | **Average Hit Count** |
| 30 | 0 | 0 |
|  |  |  |
| **Min Hit Rate** | **Max Hit Rate** | **Average Hit Rate** |
| 100% | 0% | 0% |

**Q7:**

The crossover operator is used to create new individuals by combining the genetic material of two parent individuals. This allows the genetic algorithm to explore new regions of the search space and potentially find better solutions.

The mutation operator is used to introduce small, random changes to the genetic material of an individual. This helps to prevent the population from becoming too homogenous and allows the genetic algorithm to escape local minima or maxima.

The selection operator is used to choose which individuals will be used as parents for the next generation. This is typically done based on the fitness of the individuals, with more fit individuals being more likely to be selected as parents. The selection operator plays a key role in determining the direction of evolution and helps to ensure that the population as a whole is moving towards better solutions.