

# Uniwersytet Jana Długosza w Częstochowie

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# Task1

| population_si<br>ze | chromosome<br>_length | generations | mutation_pro | Best x  | Best f(x)         |
|---------------------|-----------------------|-------------|--------------|---------|-------------------|
| 10                  | 5                     | 10          | 0.01         | 31      | 961               |
| 10                  | 5                     | 10          | 0.02         | 27      | 729               |
| 20                  | 10                    | 20          | 0.05         | 1023    | 1046529           |
| 20                  | 21                    | 5           | 0.15         | 2030269 | 41219922123<br>61 |
| 20                  | 11                    | 15          | 0.001        | 2036    | 4145296           |

# Task2

| population_si<br>ze | chromosome<br>_length | generations | mutation_pro<br>b | Best x | Best f(x) |
|---------------------|-----------------------|-------------|-------------------|--------|-----------|
| 10                  | 5                     | 10          | 0.01              | 31     | 961       |
| 10                  | 5                     | 10          | 0.03              | 30     | 900       |
| 10                  | 5                     | 10          | 0.05              | 31     | 961       |
| 10                  | 5                     | 10          | 0.07              | 29     | 841       |
| 10                  | 5                     | 10          | 0.09              | 29     | 841       |

# Task3

| population_si<br>ze | chromosome<br>_length | generations | mutation_pro<br>b | Best x | Best f(x) |
|---------------------|-----------------------|-------------|-------------------|--------|-----------|
| 2                   | 5                     | 10          | 0.01              | 23     | 529       |
| 4                   | 5                     | 10          | 0.01              | 20     | 400       |

### Task4

| population_si<br>ze | chromosome<br>_length | generations | mutation_pro | Best x | Best f(x) |
|---------------------|-----------------------|-------------|--------------|--------|-----------|
| 10                  | 5                     | 10          | 0.01         | 31     | 961       |
| 10                  | 5                     | 20          | 0.01         | 30     | 900       |
| 10                  | 5                     | 50          | 0.01         | 31     | 961       |
| 10                  | 5                     | 100         | 0.01         | 31     | 961       |

### Task5

| population_si<br>ze | chromosome<br>_length | generations | mutation_pro | Best x  | Best f(x) |
|---------------------|-----------------------|-------------|--------------|---------|-----------|
| 10                  | 5                     | 10          | 0.01         | 28      | 59        |
| 10                  | 5                     | 10          | 0.02         | 27      | 57        |
| 20                  | 10                    | 20          | 0.05         | 31      | 65        |
| 20                  | 21                    | 5           | 0.15         | 2089419 | 4178841   |
| 20                  | 11                    | 15          | 0.001        | 1962    | 3927      |