We will calculate the MSE for each of the requested combinations. I will modify the original code with a loop so that it goes through all the pairs and calculates the error.

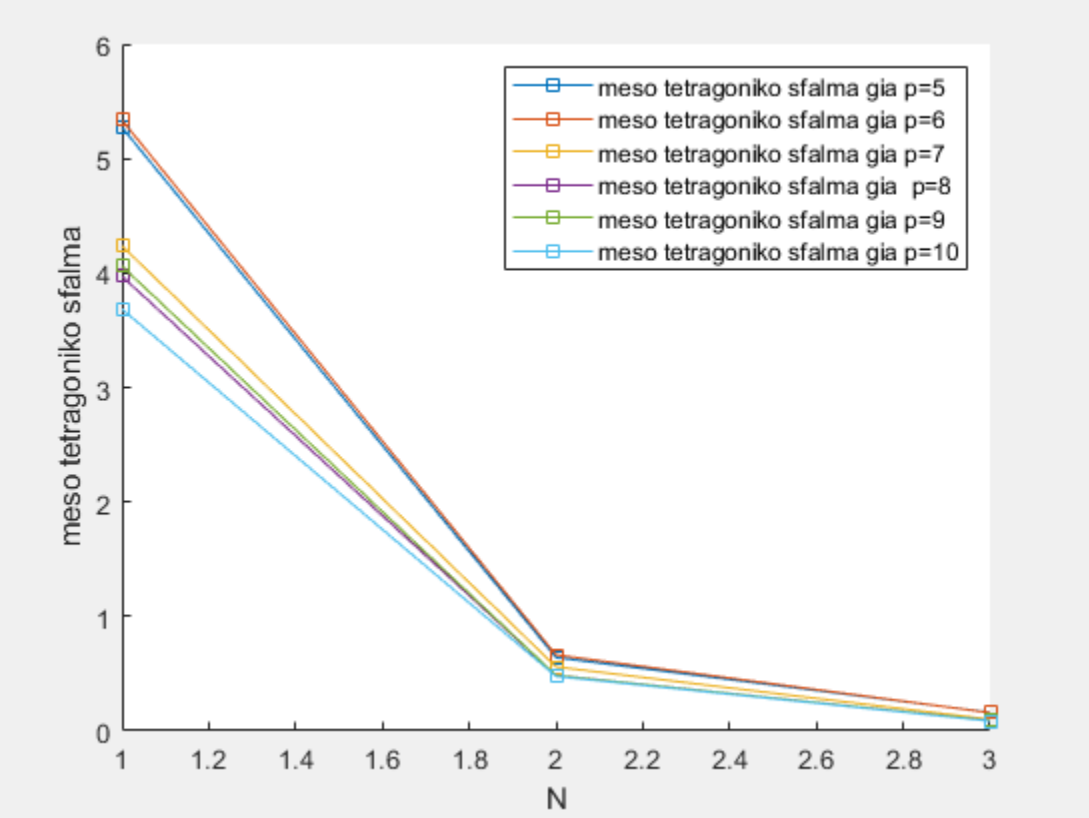
```
% ipologismos mse gia kathe iteration tou loop
            MSE(p-4, N) = mean((x - anakataskeuasmeno_sima).^2);
```

```
mse gia kathe sindiasmo:
    5.2714    0.6409    0.1611
    5.3353    0.6633    0.1586
    4.2377    0.5591    0.1004
    3.9709    0.4855    0.0898
    4.0595    0.4841    0.0892
    3.6841    0.4766    0.0863
```

Next, I will simply take the results I found and manually create the plots:

```
times_kvadisti = [1 2 3];
mse_giap5 = [5.2714, 0.6409, 0.1611];
mse_giap6 = [5.3353, 0.6633, 0.1586];
mse_giap7 = [4.2377, 0.5591, 0.1004];
mse_giap8 = [3.9709, 0.4855, 0.0898];
mse_giap9 = [4.0595, 0.4841, 0.0892];
mse_giap10 = [3.6841, 0.4766, 0.0863];
```

The result of the code is:



Observing the results, we can distinguish that:

Increasing **p** generally leads to a reduction in the error, although, as mentioned above, this is not guaranteed. In some cases (for **p = 6** and **p = 9**), the error even increases. Additionally, the changes are actually minimal compared to the increase in **N**. At best, **p** reduces the error by 1.5 units, while **N** reduces the error by up to 5 units. These findings coincide with the conclusion of the previous question.