

# Tournament Size Experiments

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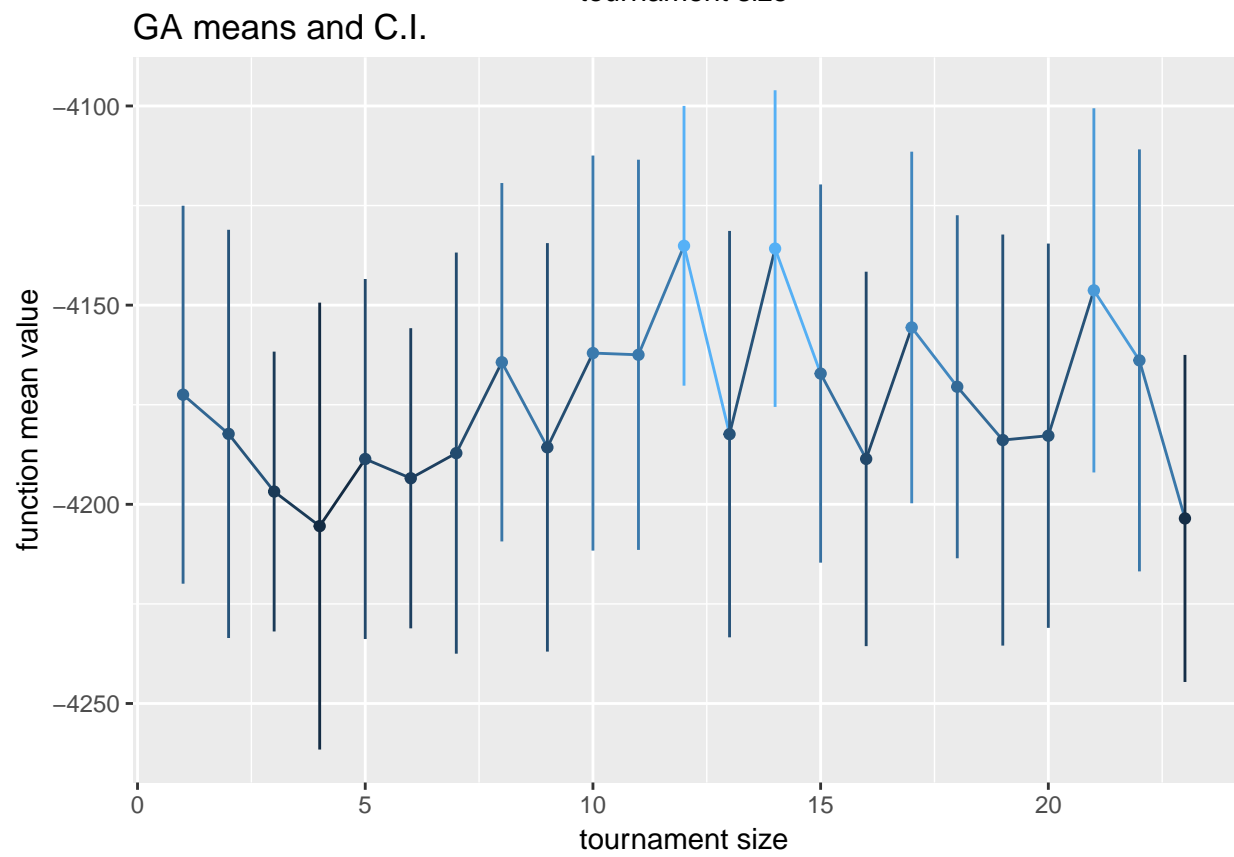
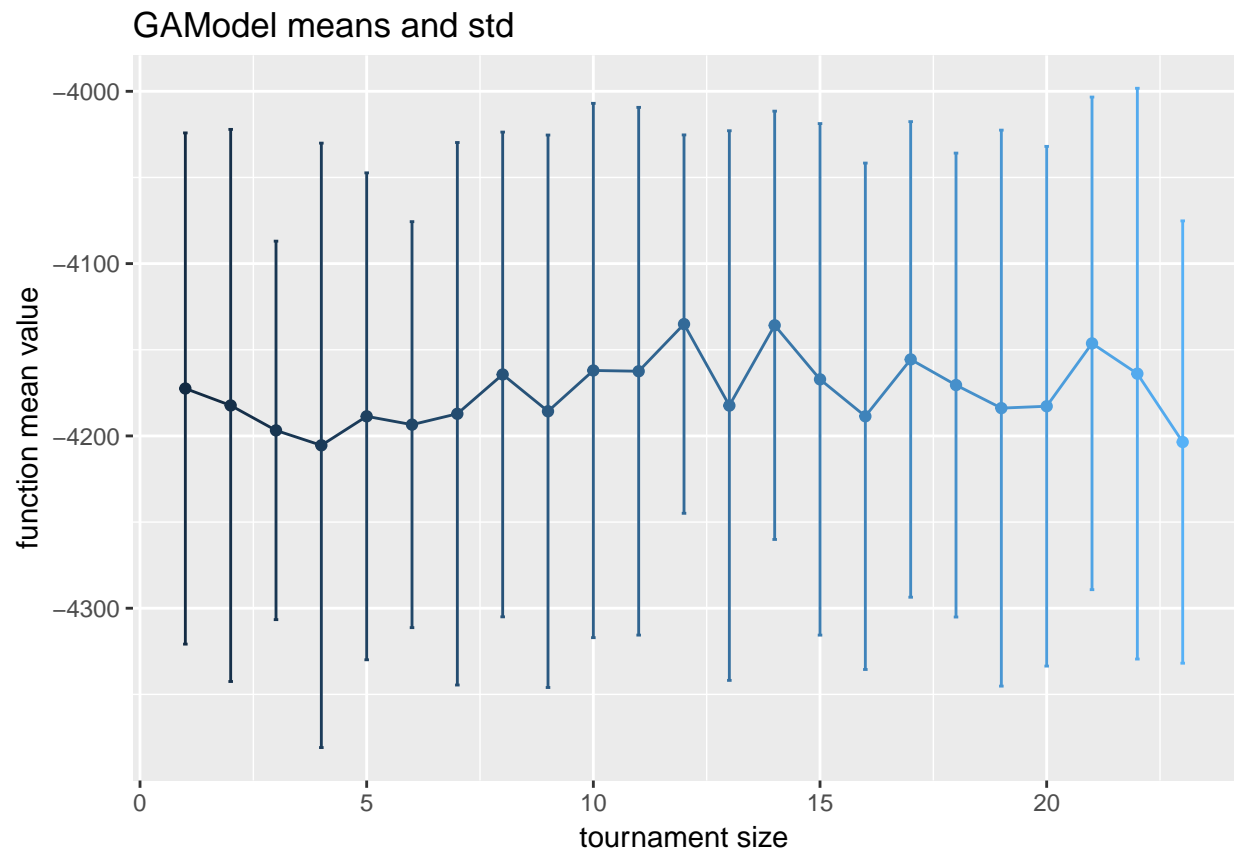
## Summary

In this document we show two plots for the GAModel and the GABBOB - a simple GA applied to the BBOB benchmark functions - with tournament size ( $k$ ) from 2 to 25, with the Uniform crossover operator (with 0.1 of independent probability of exchanging an gene).

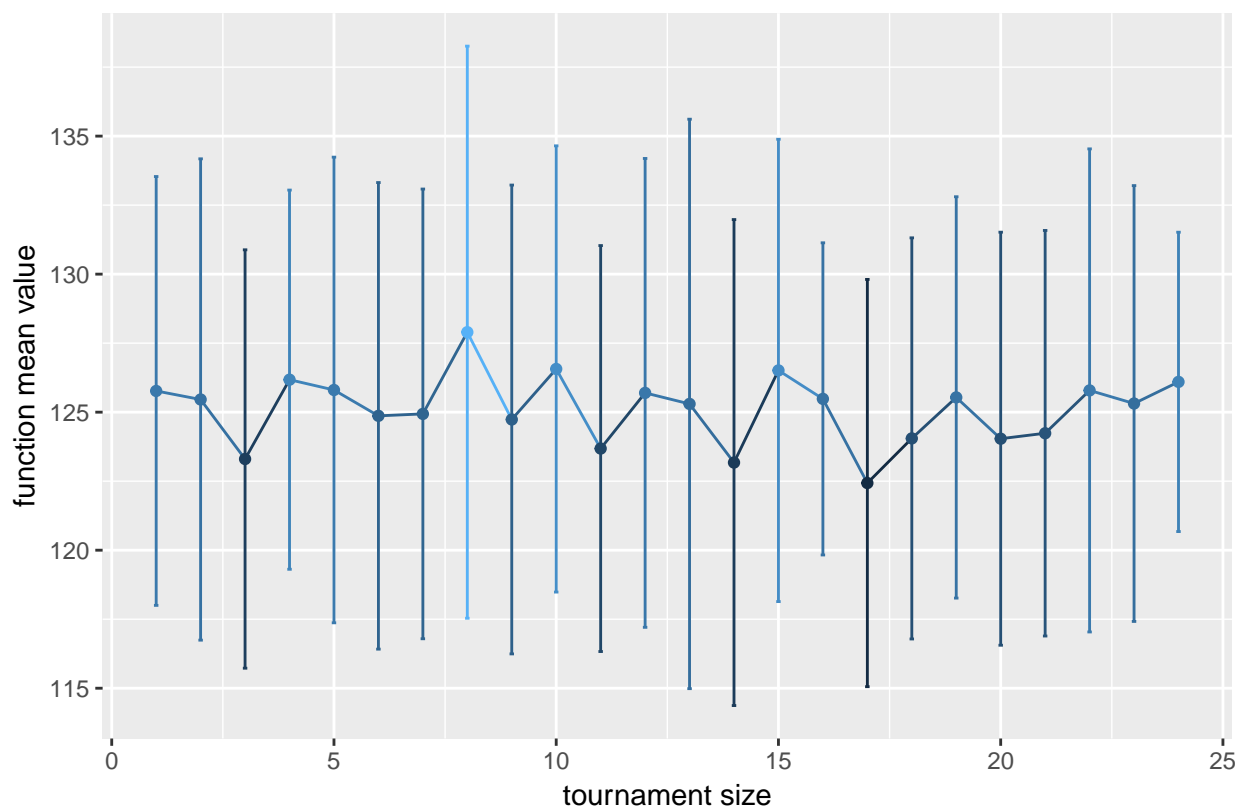
Every plot it was calculated the mean, the standard deviation (std) and the confidence interval (C.I) of 40 runs of a configuration. As an example of a configuration, given by: evaluation function, tournament size, is GABBOB F1 with  $k = 2$ . For each configuration two plots are given. One, with the mean and the standard deviation and the other, with the mean and the CI. The graph shows the values of the mean minus and plus the std, whereas in the second plot, the graph shows mean and the CI, though the values are independent.

## Plots

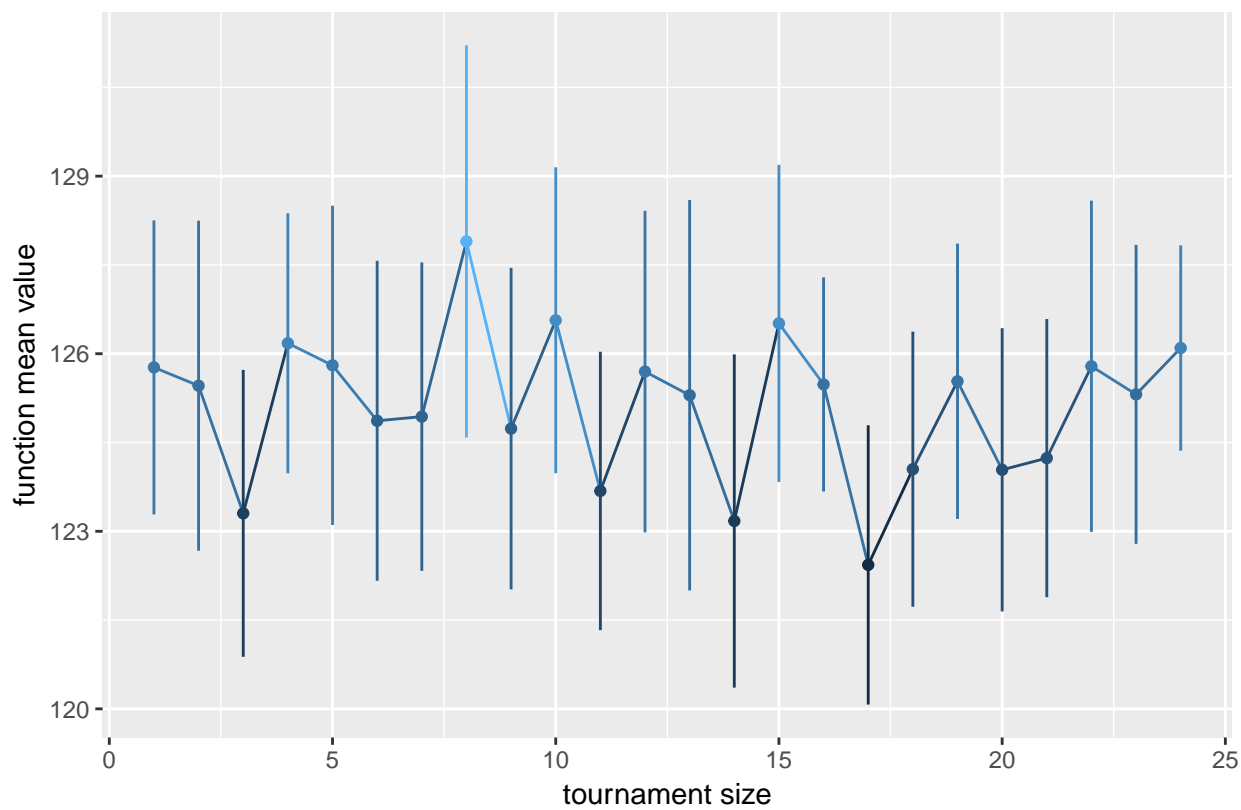
The order of the plots is: first we show the GAModel plots and then the BBOB benchmark functions, from F1 to F24.



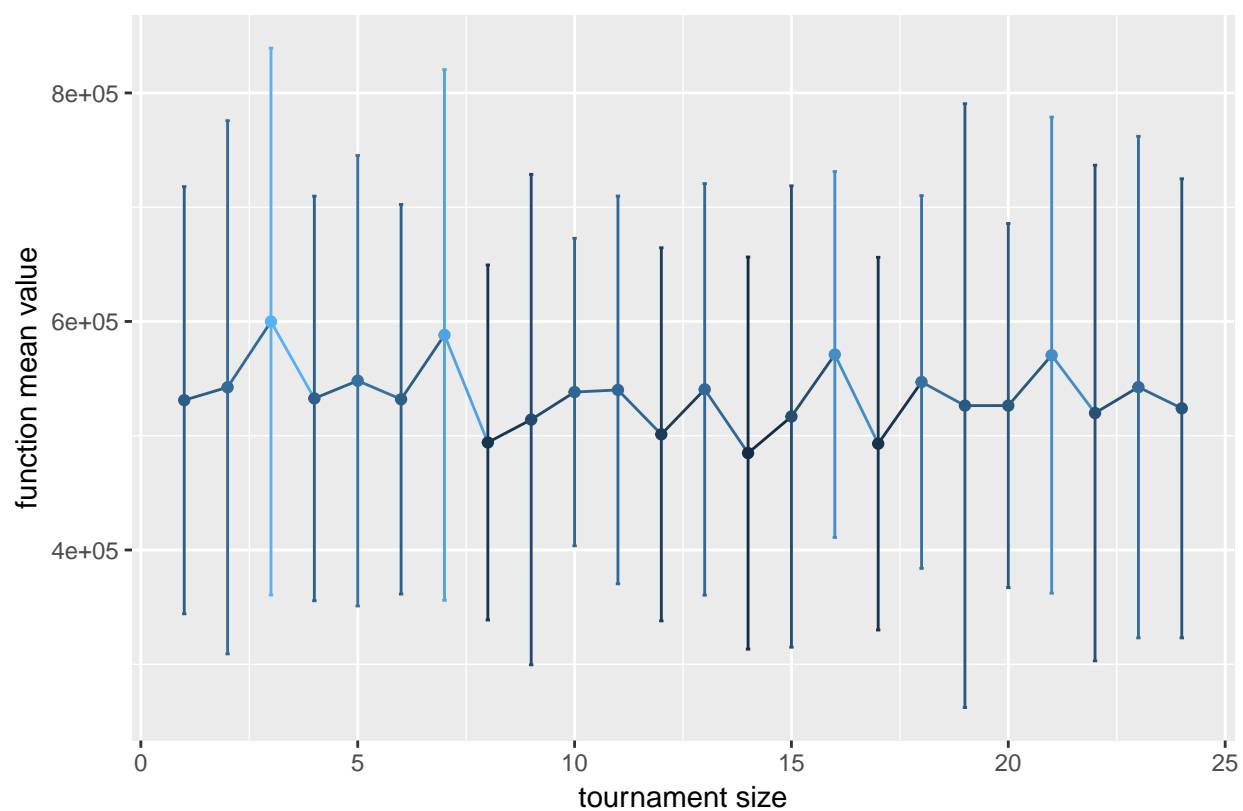
F1 means and std



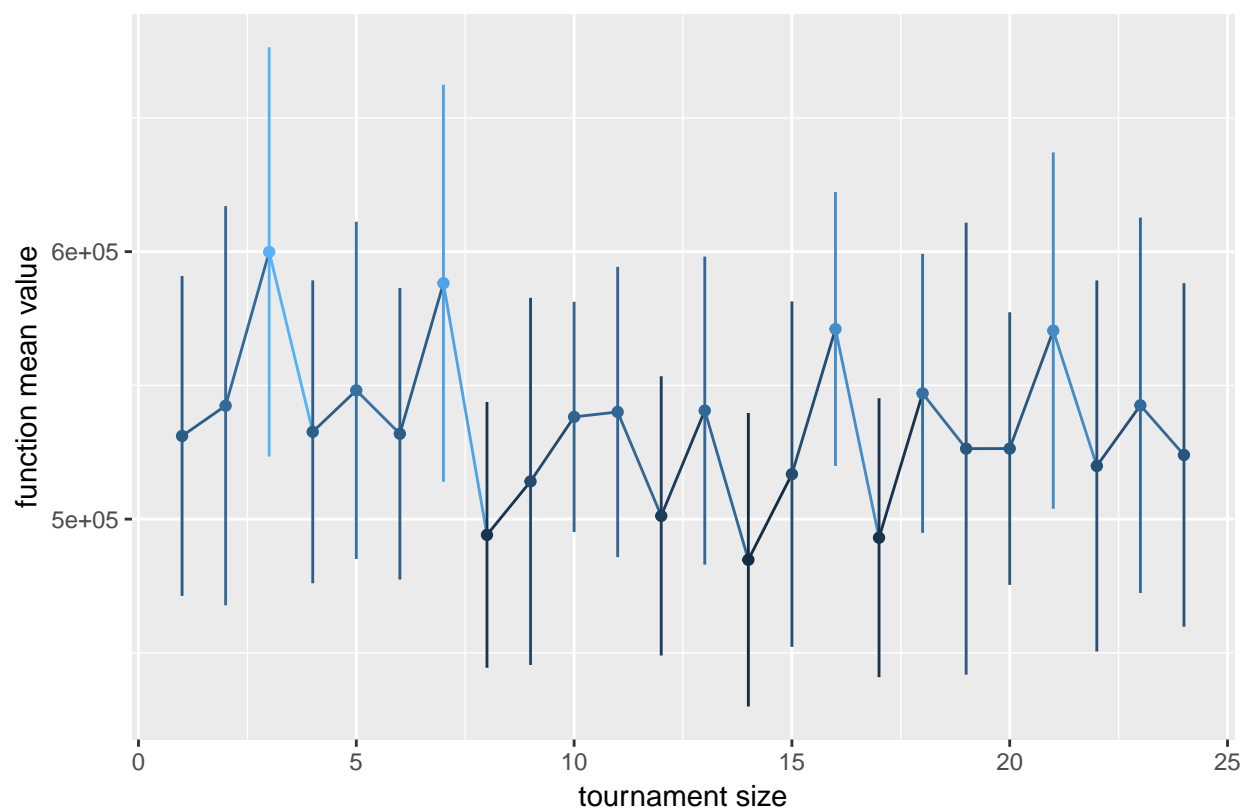
F1 means and C.I.



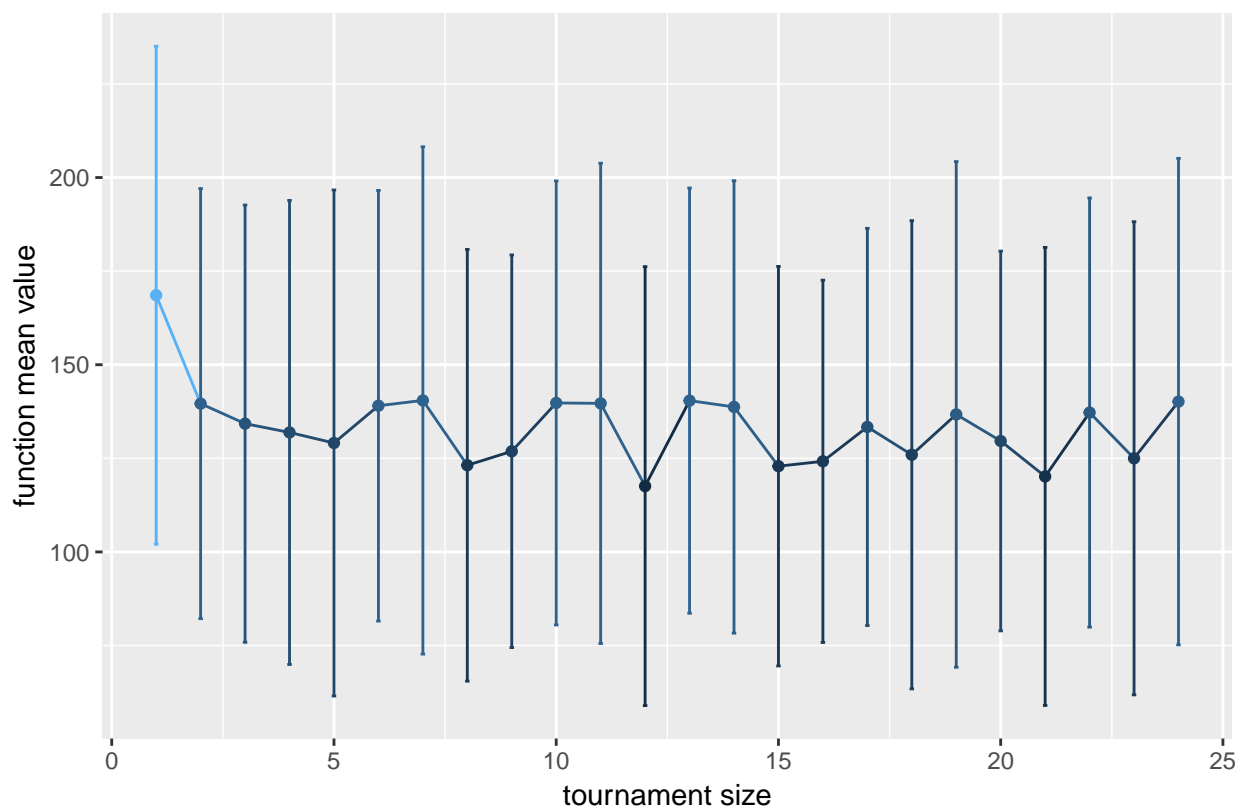
F2 means and std



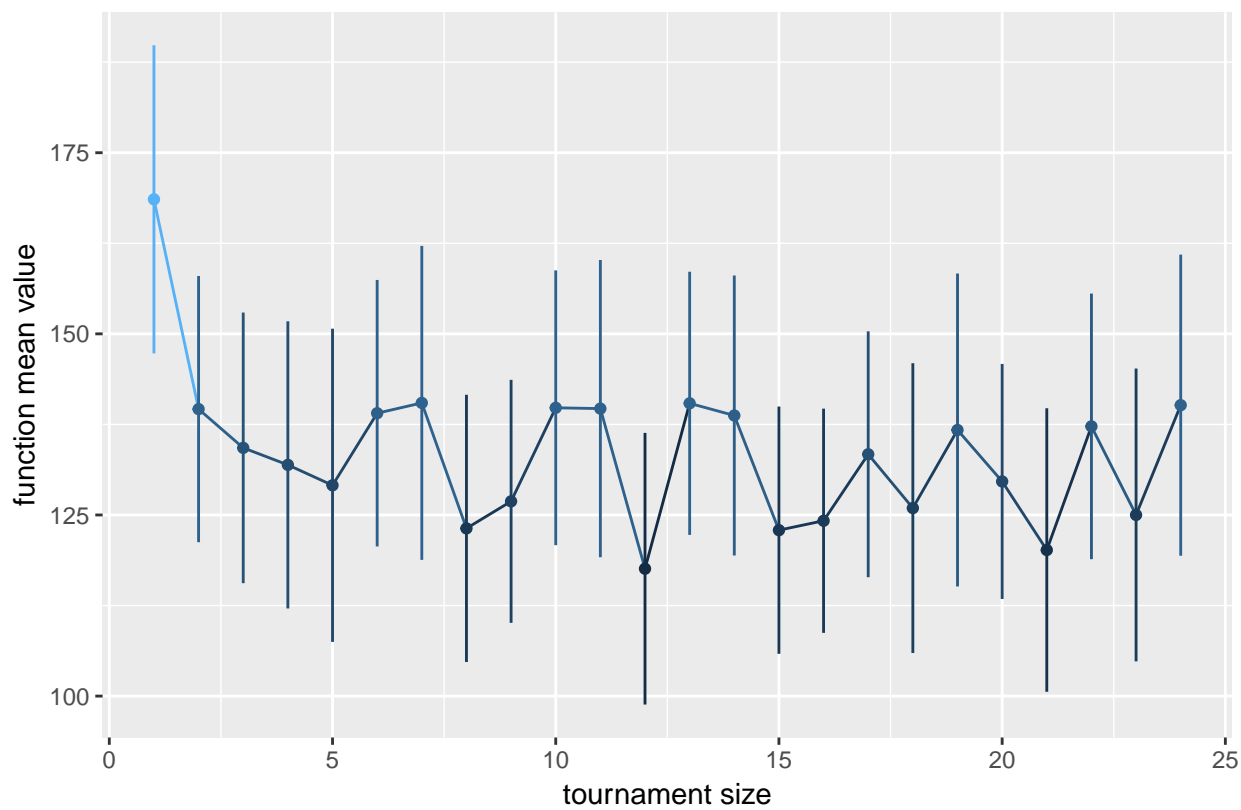
F2 means and C.I.



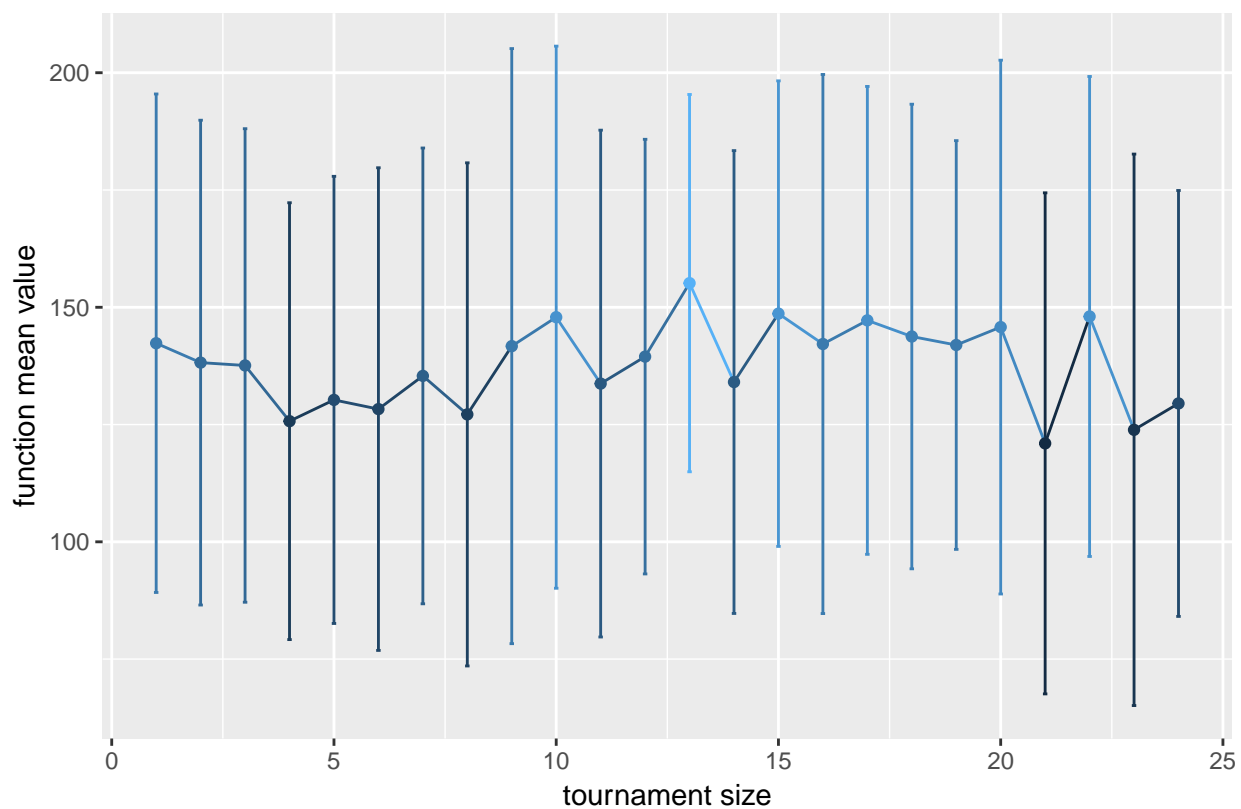
F3 means and std



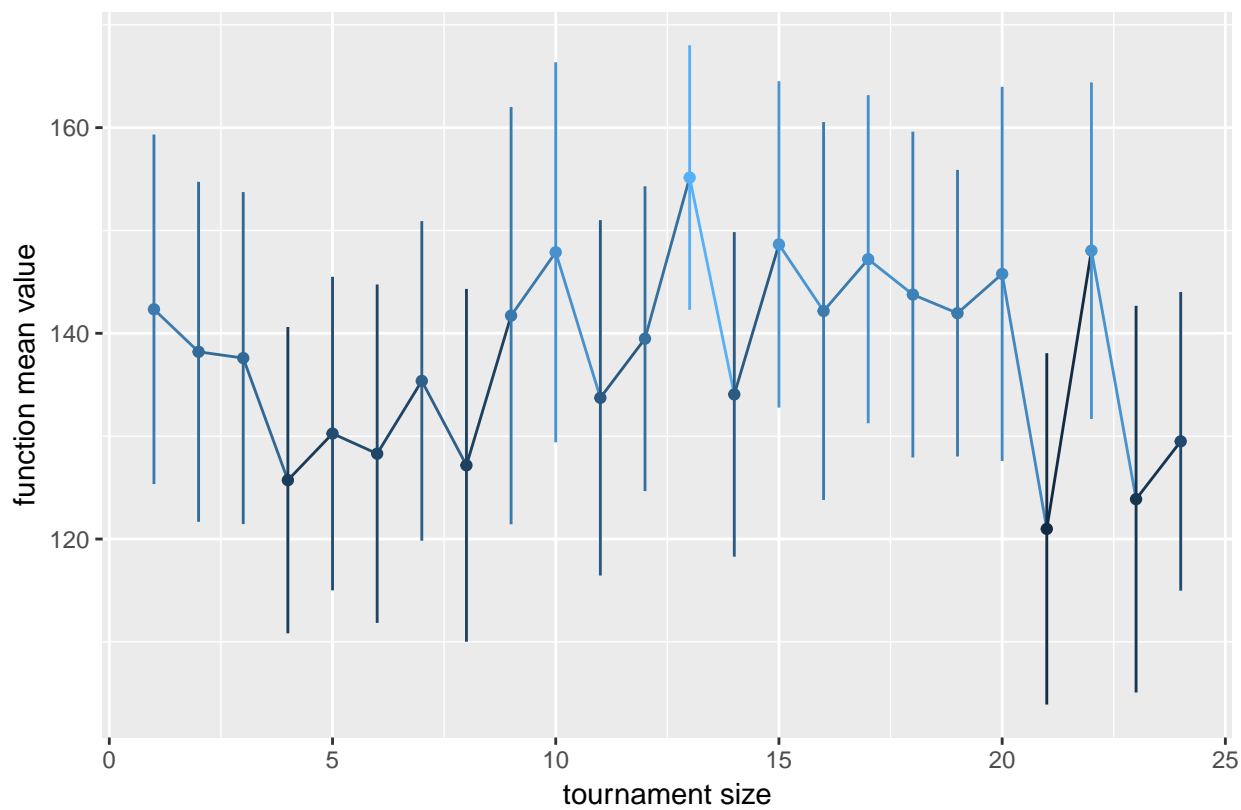
F3 means and C.I.



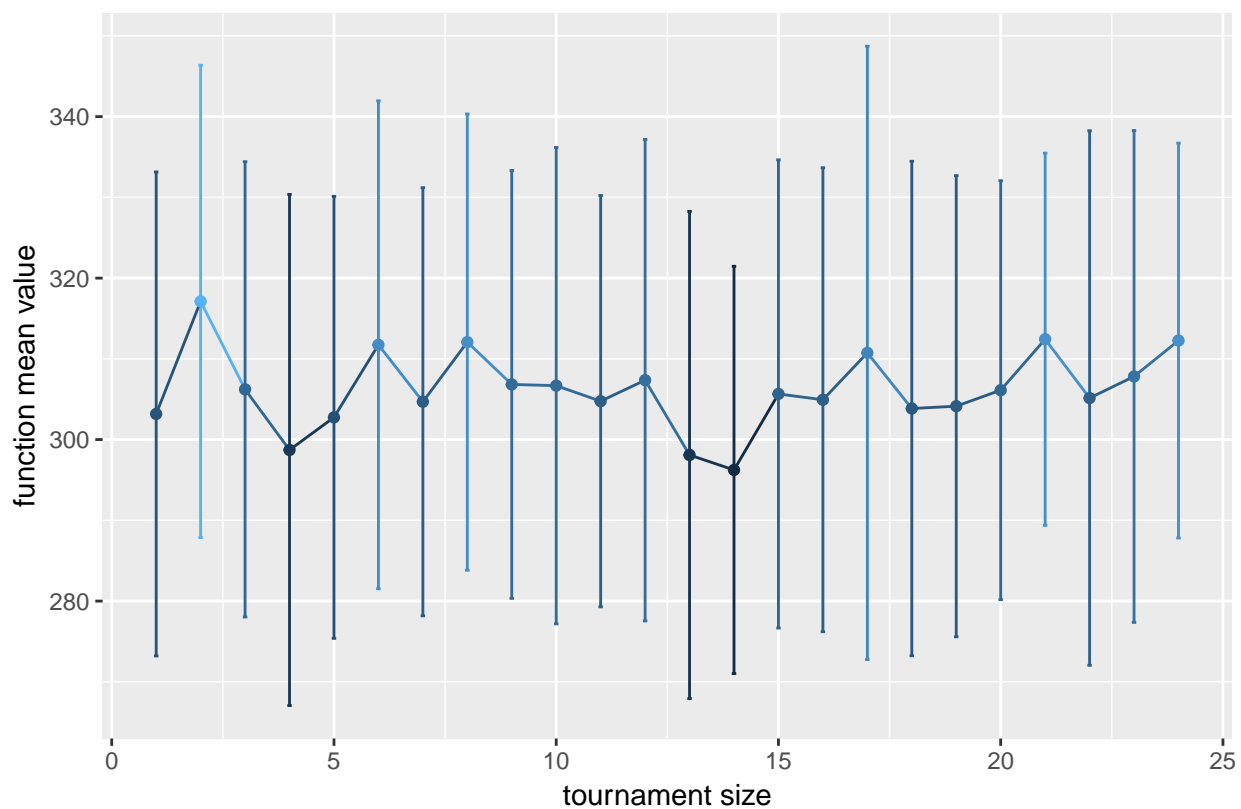
F4 means and std



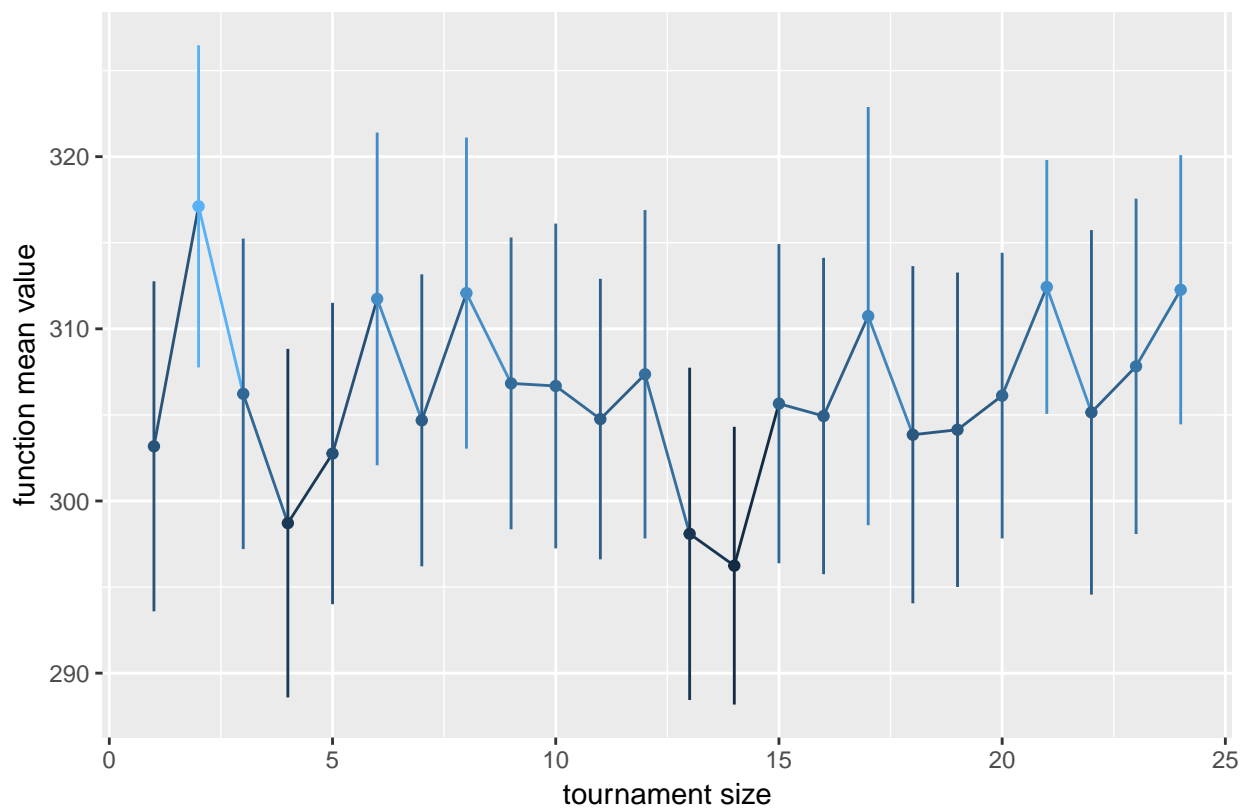
F4 means and C.I.



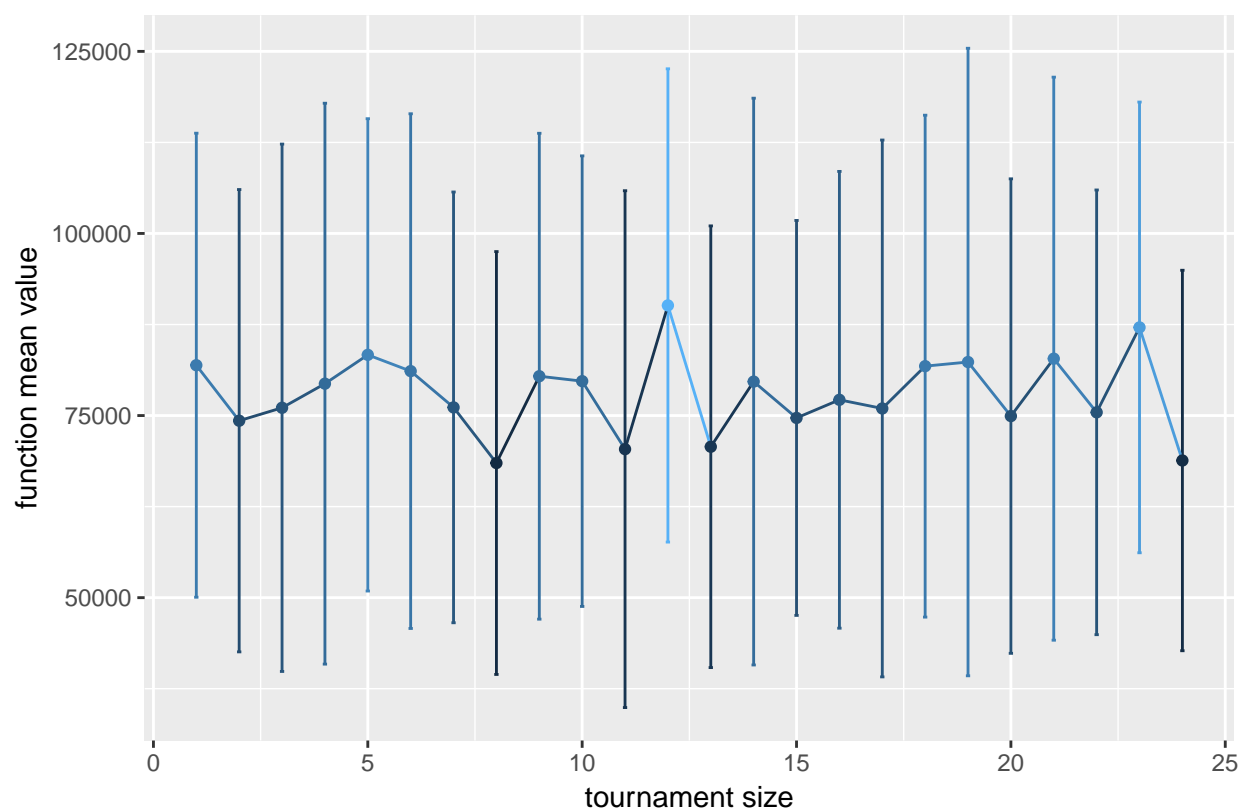
F5 means and std



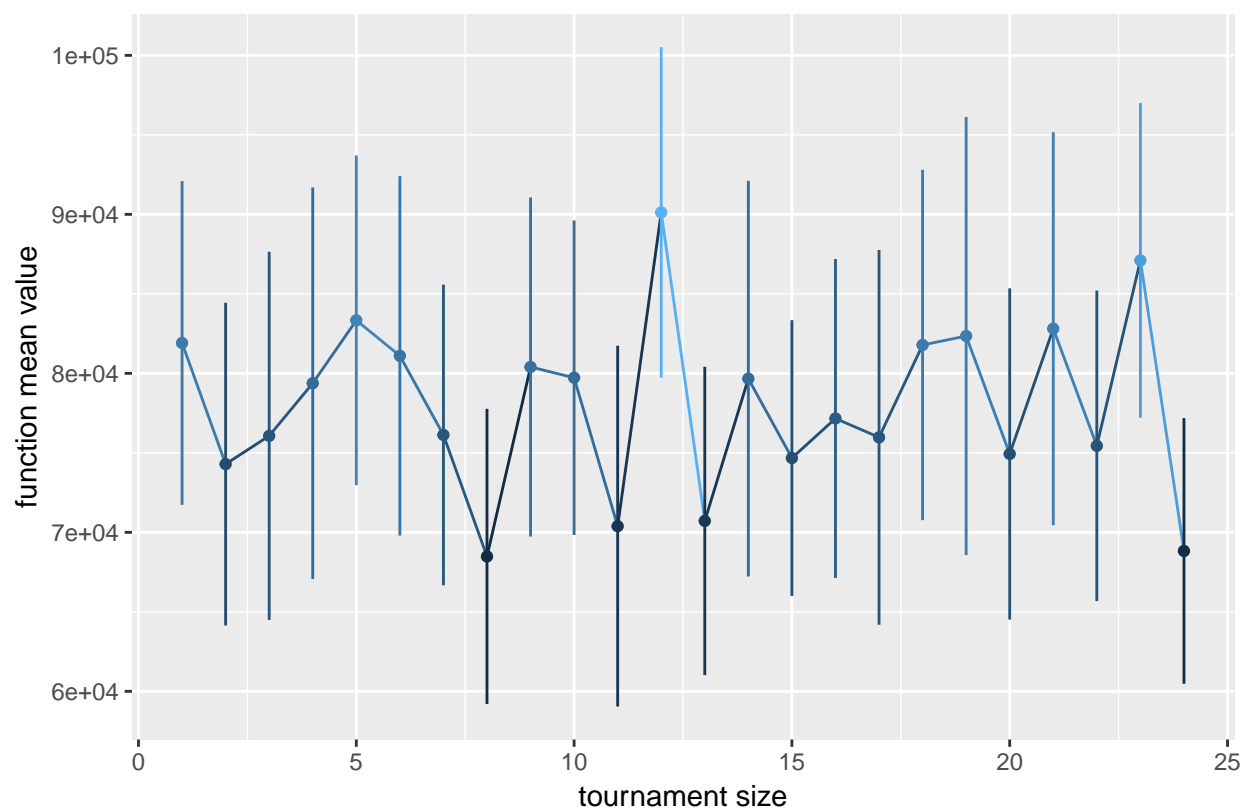
F5 means and C.I.



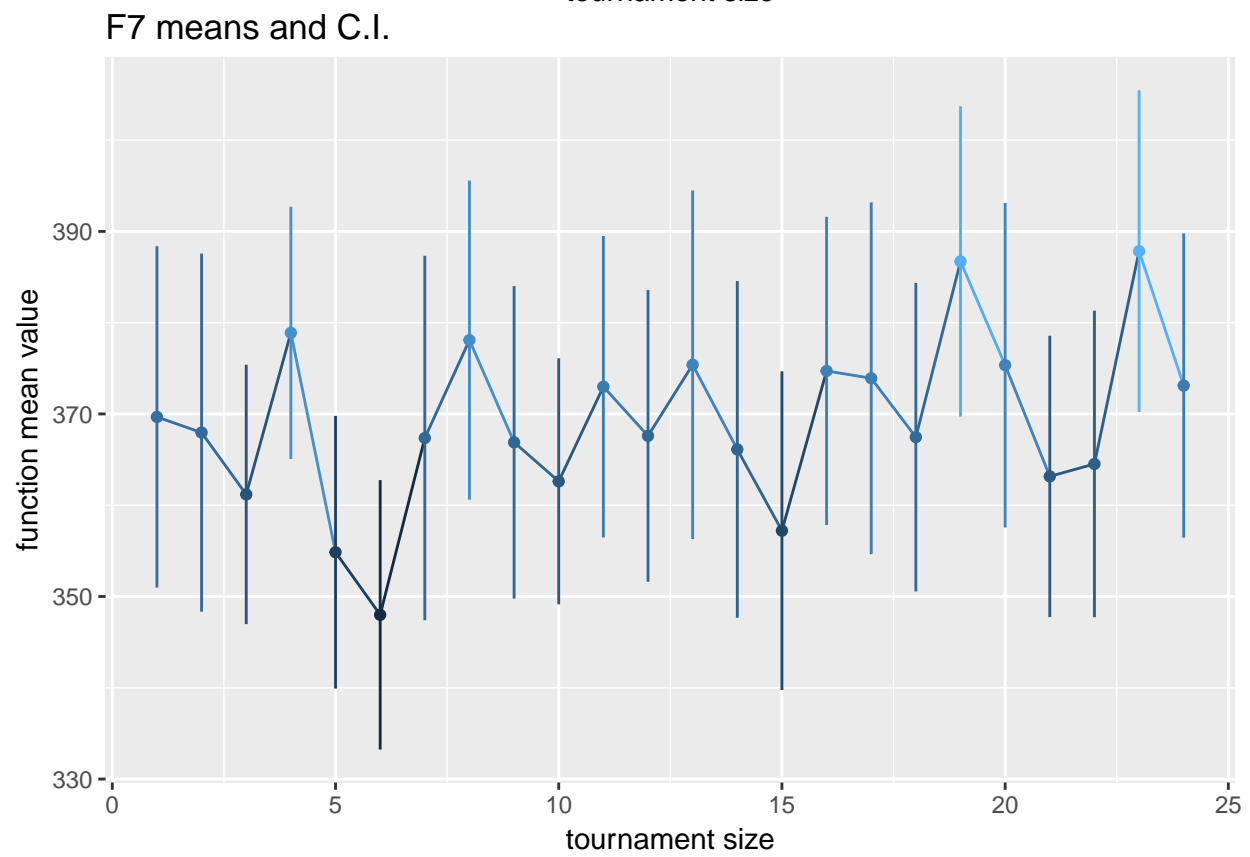
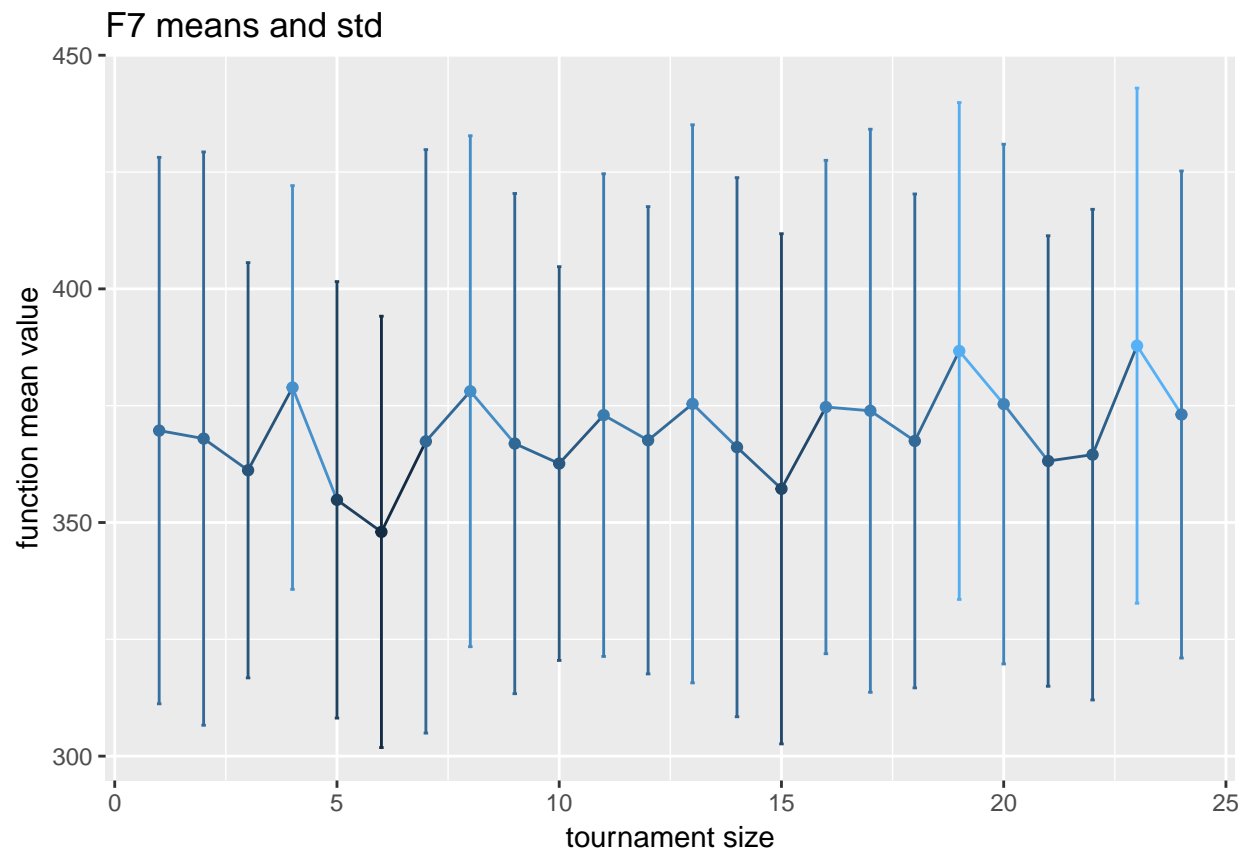
F6 means and std



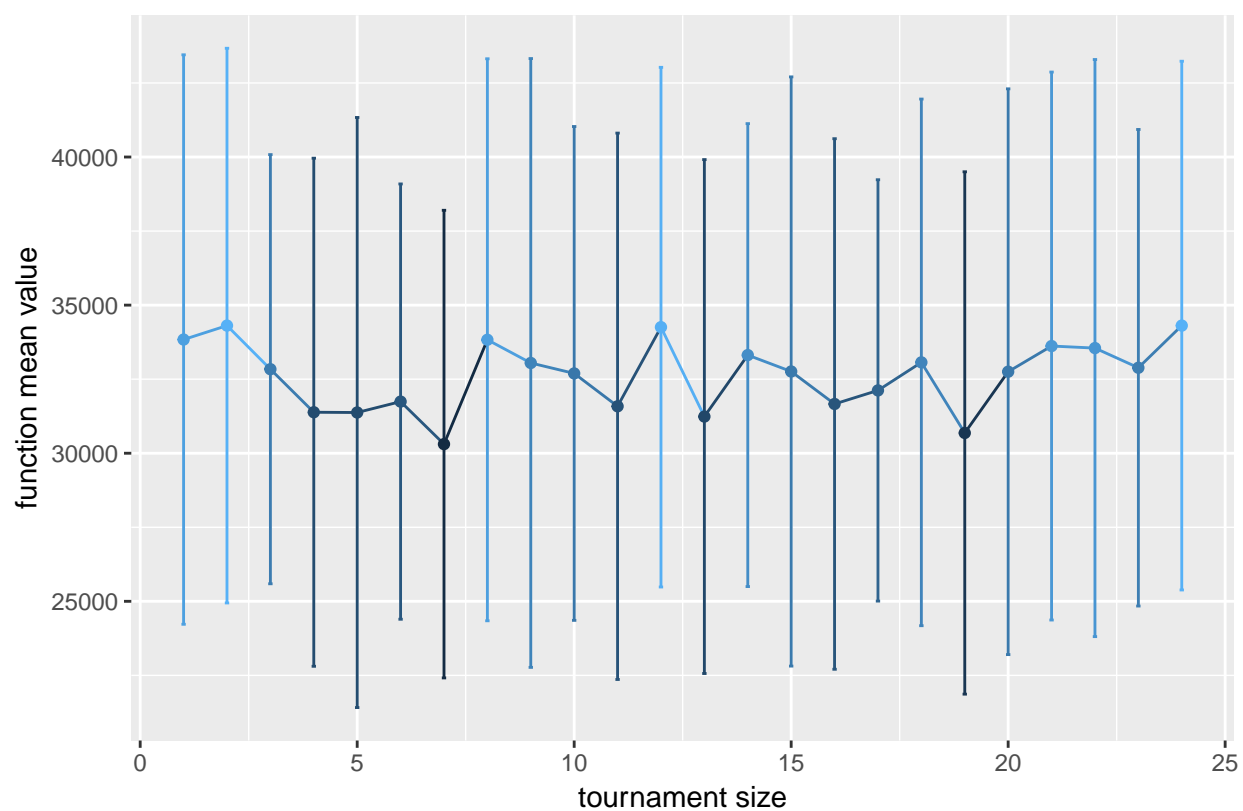
F6 means and C.I.



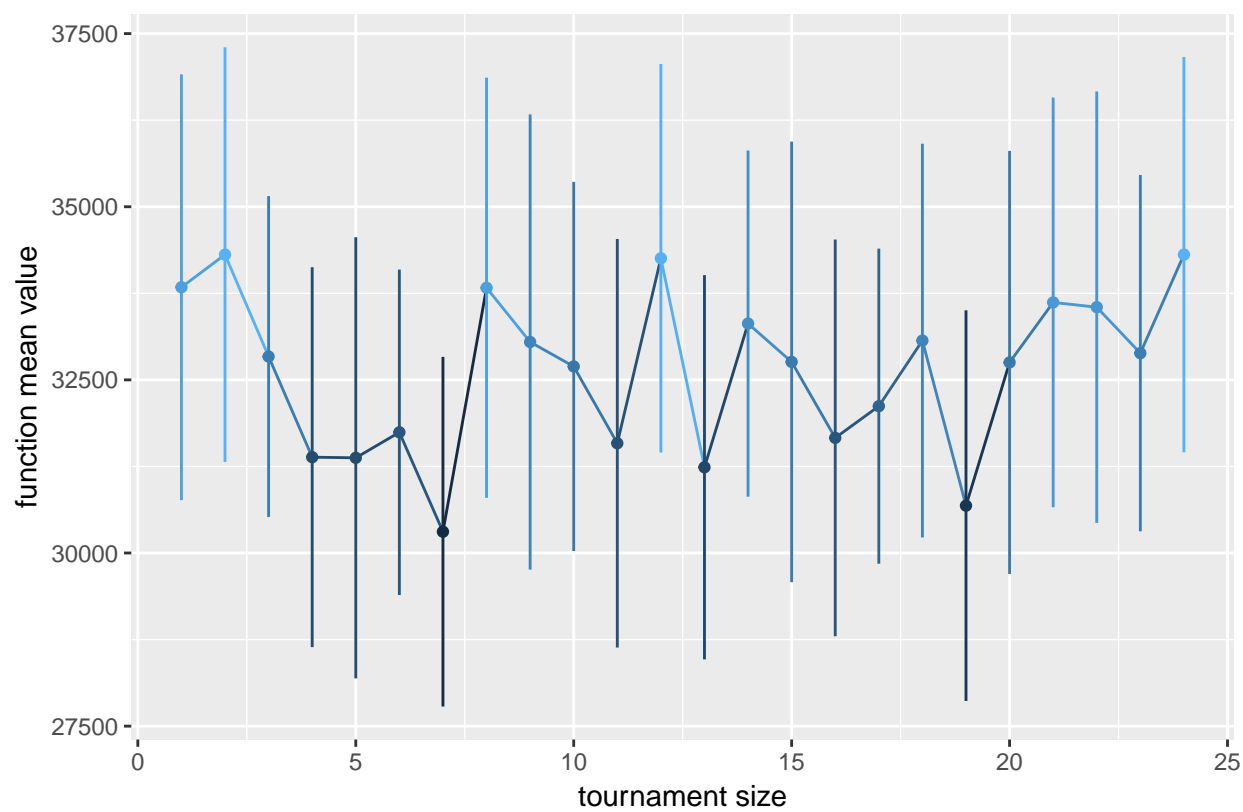




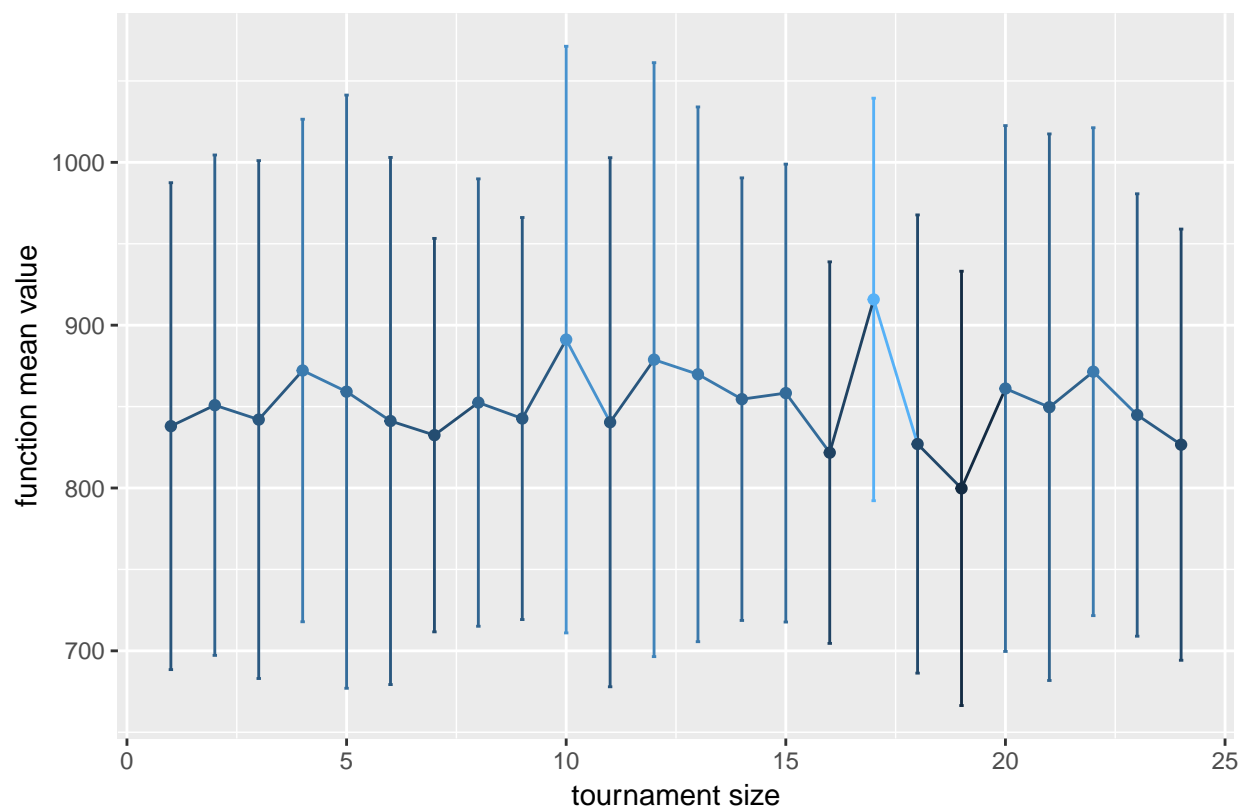
F8 means and std



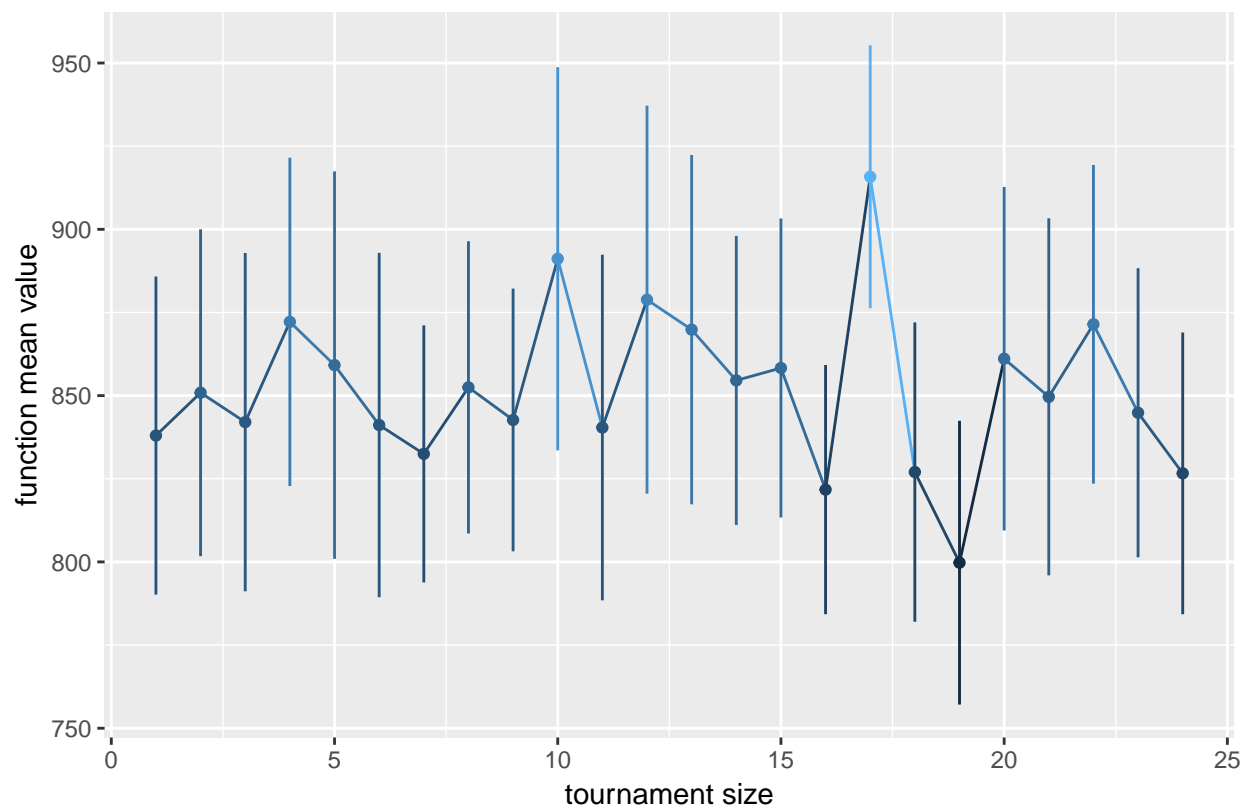
F8 means and C.I.



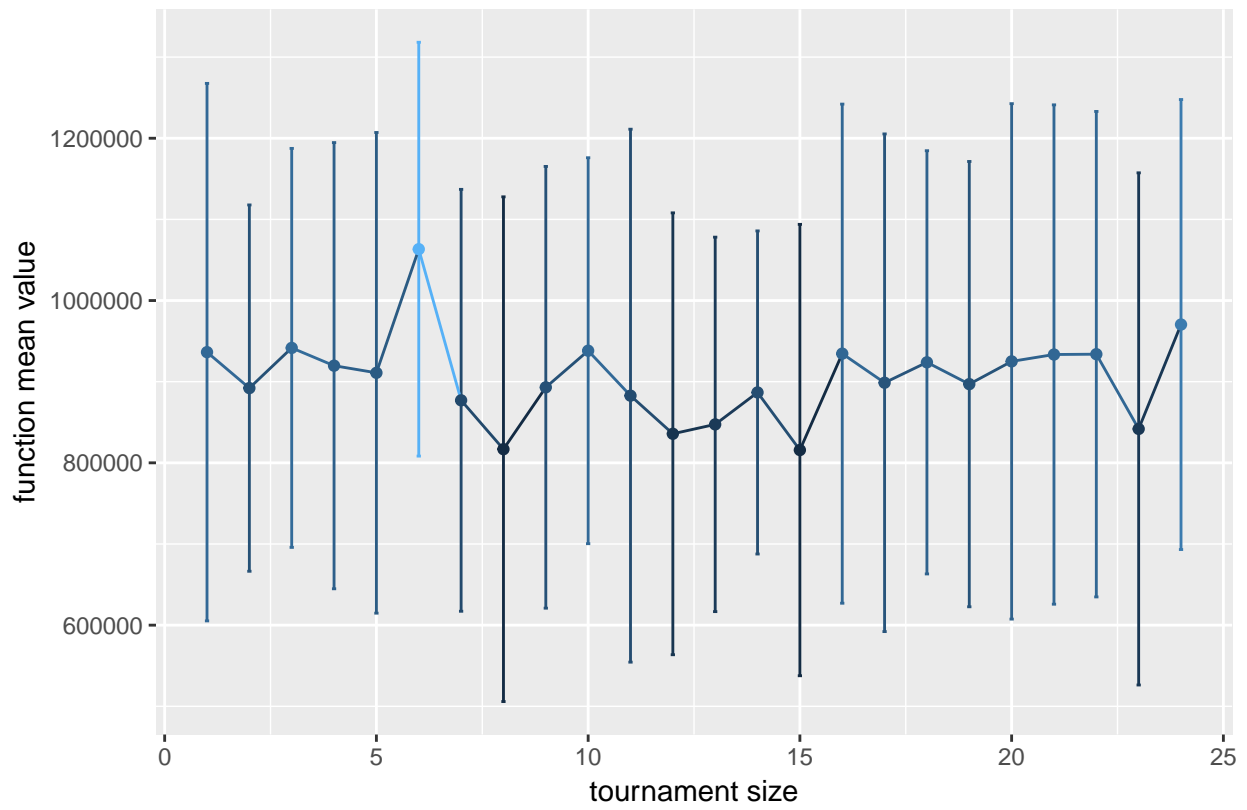
F9 means and std



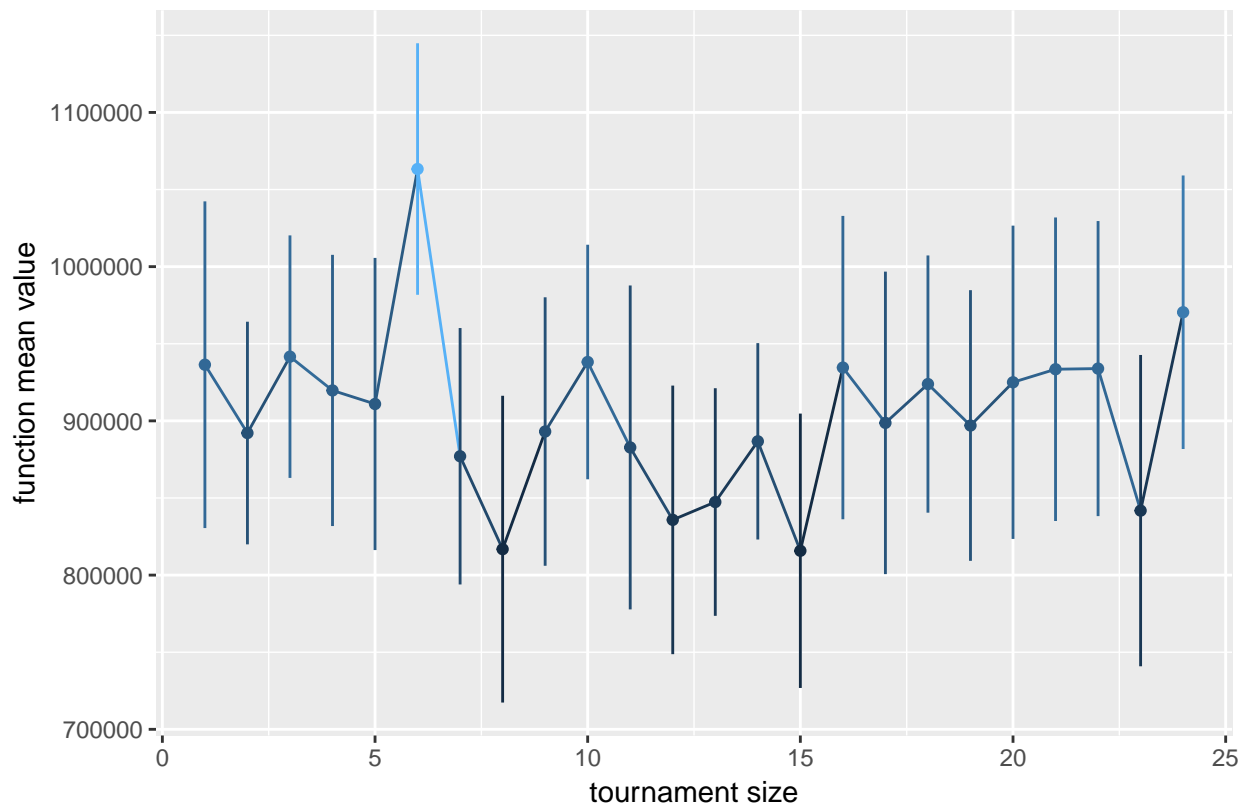
F9 means and C.I.



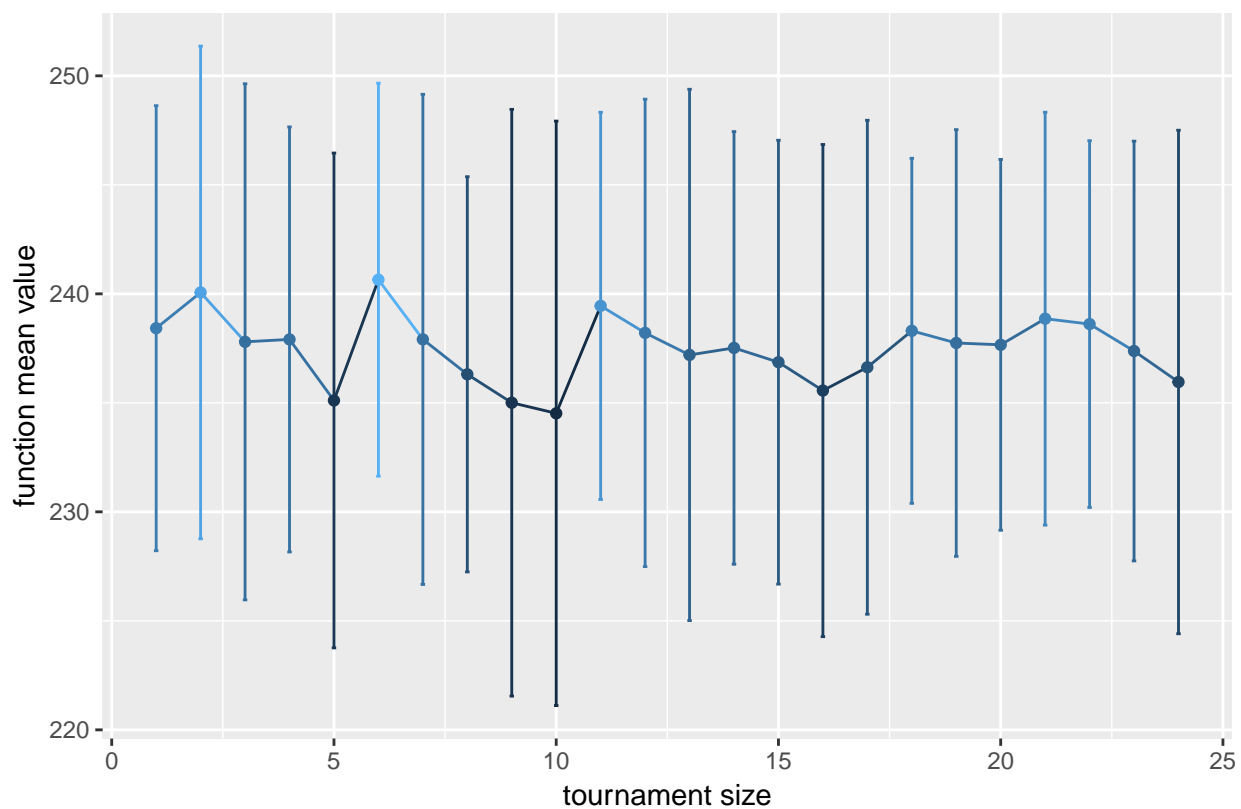
F10 means and std



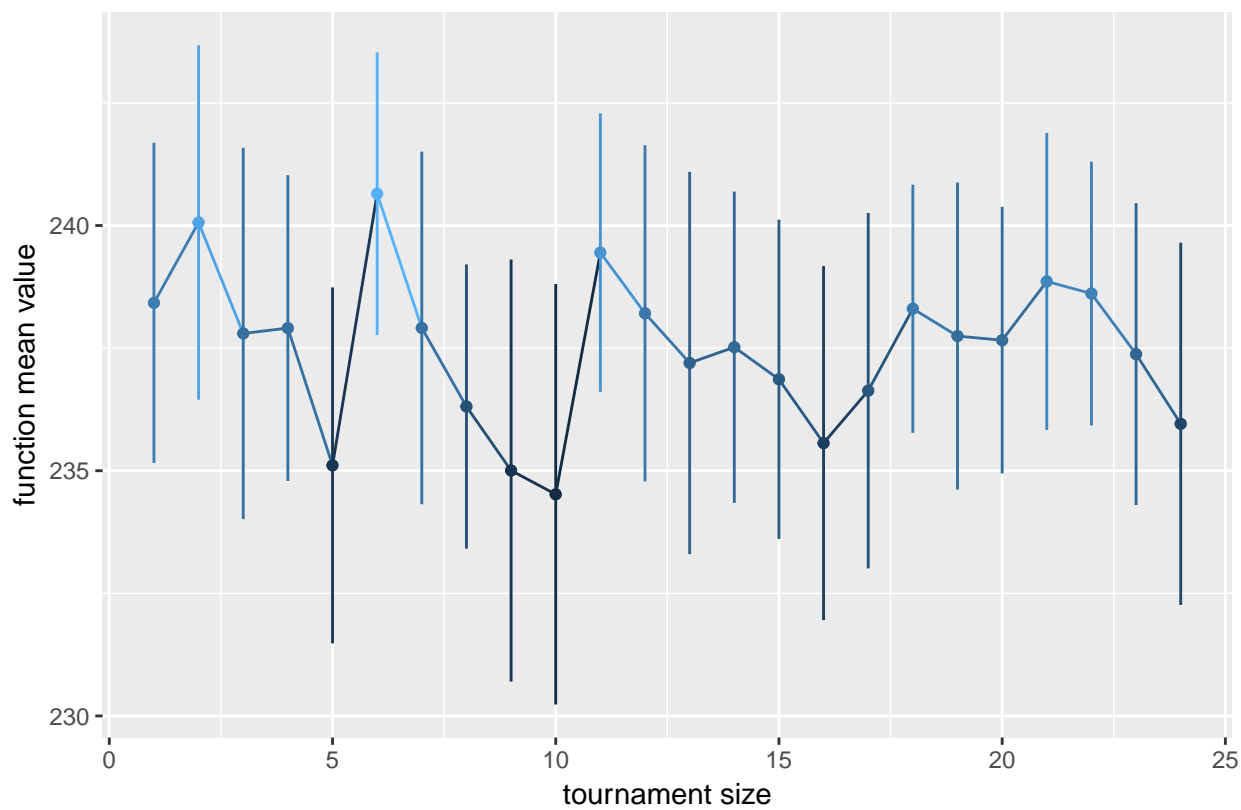
F10 means and C.I.



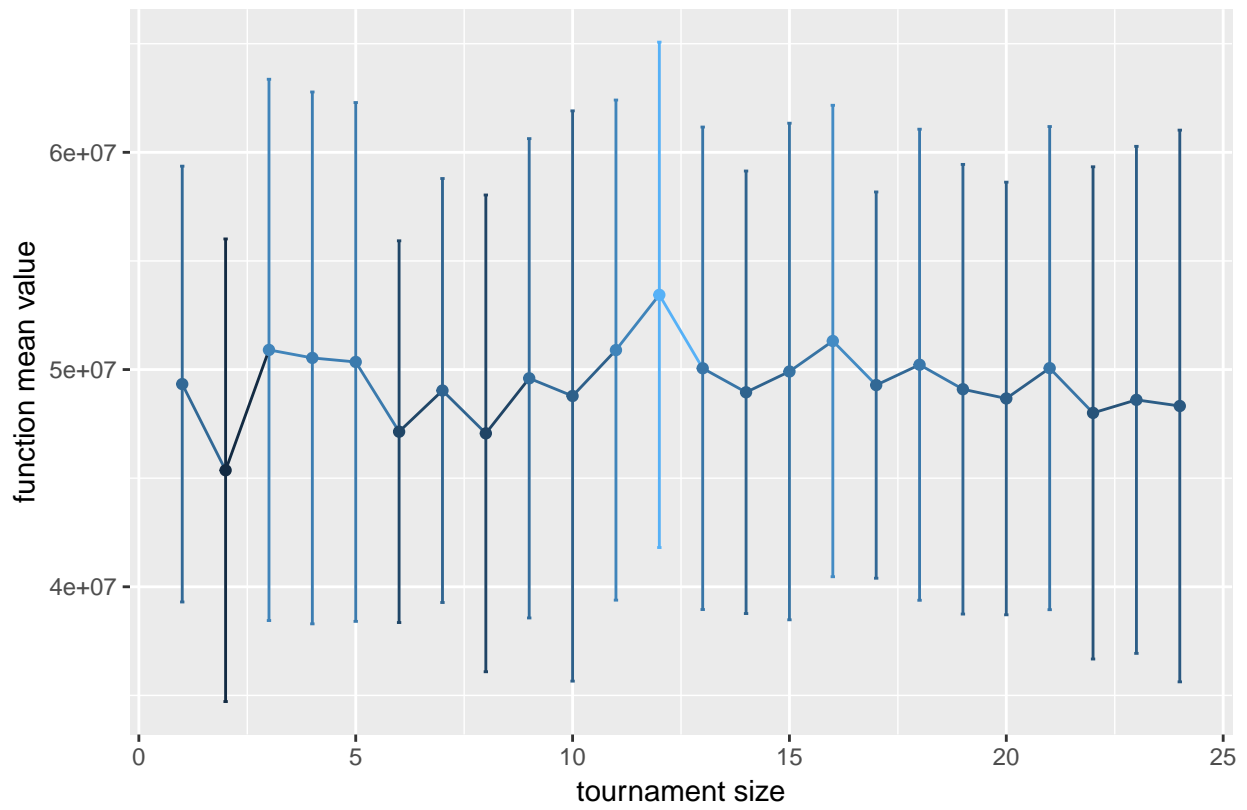
F11 means and std



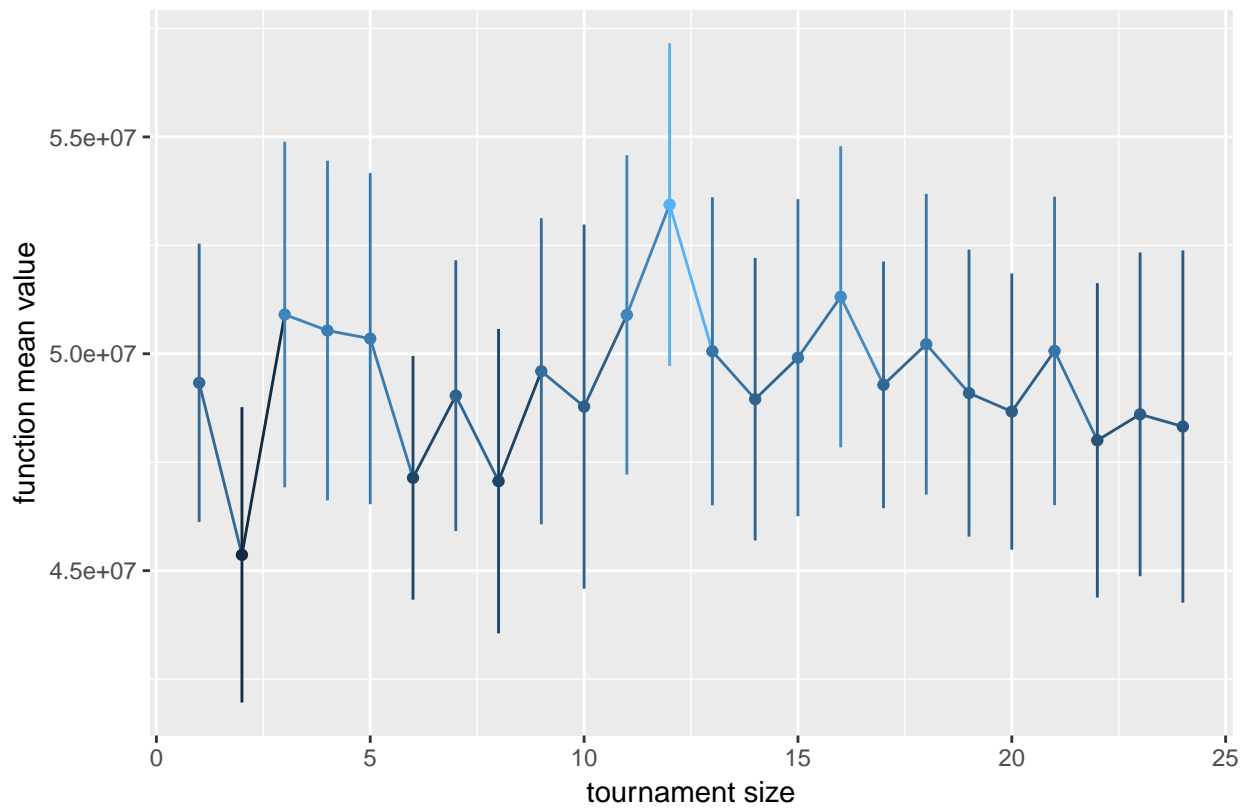
F11 means and C.I.



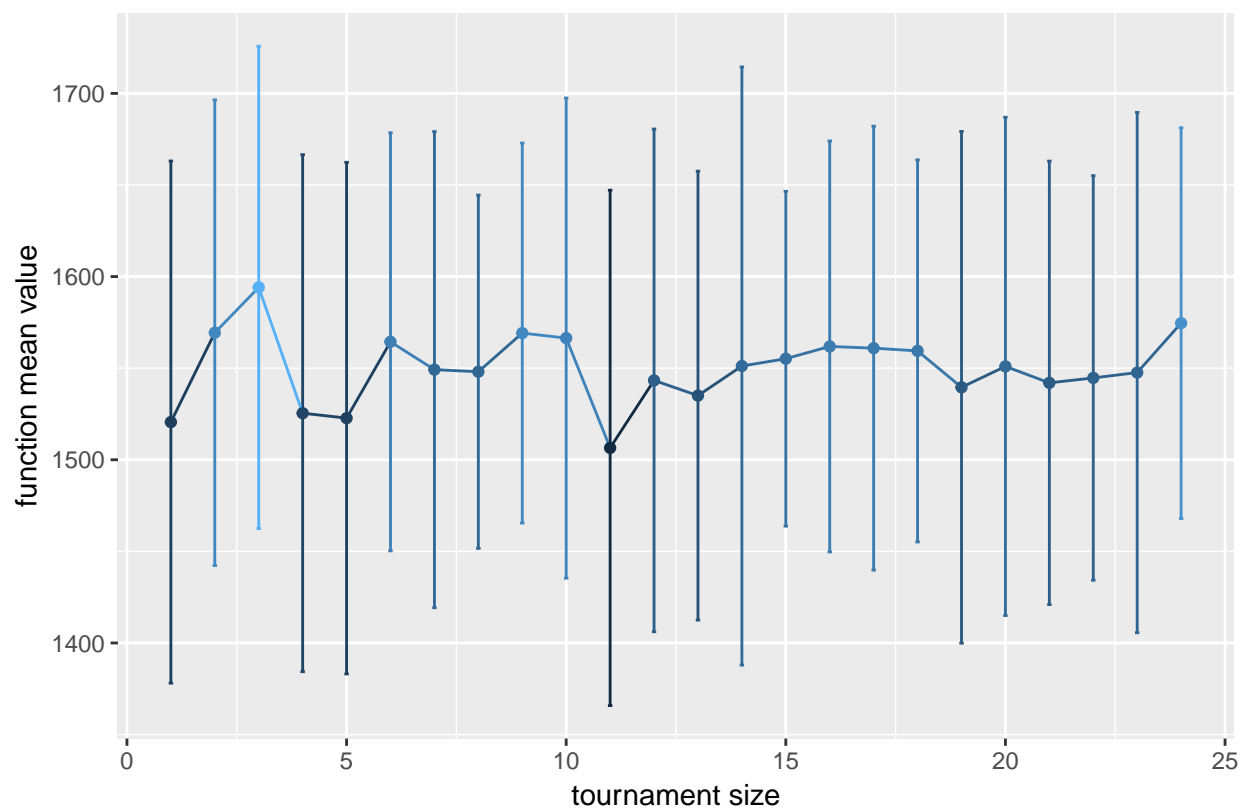
F12 means and std



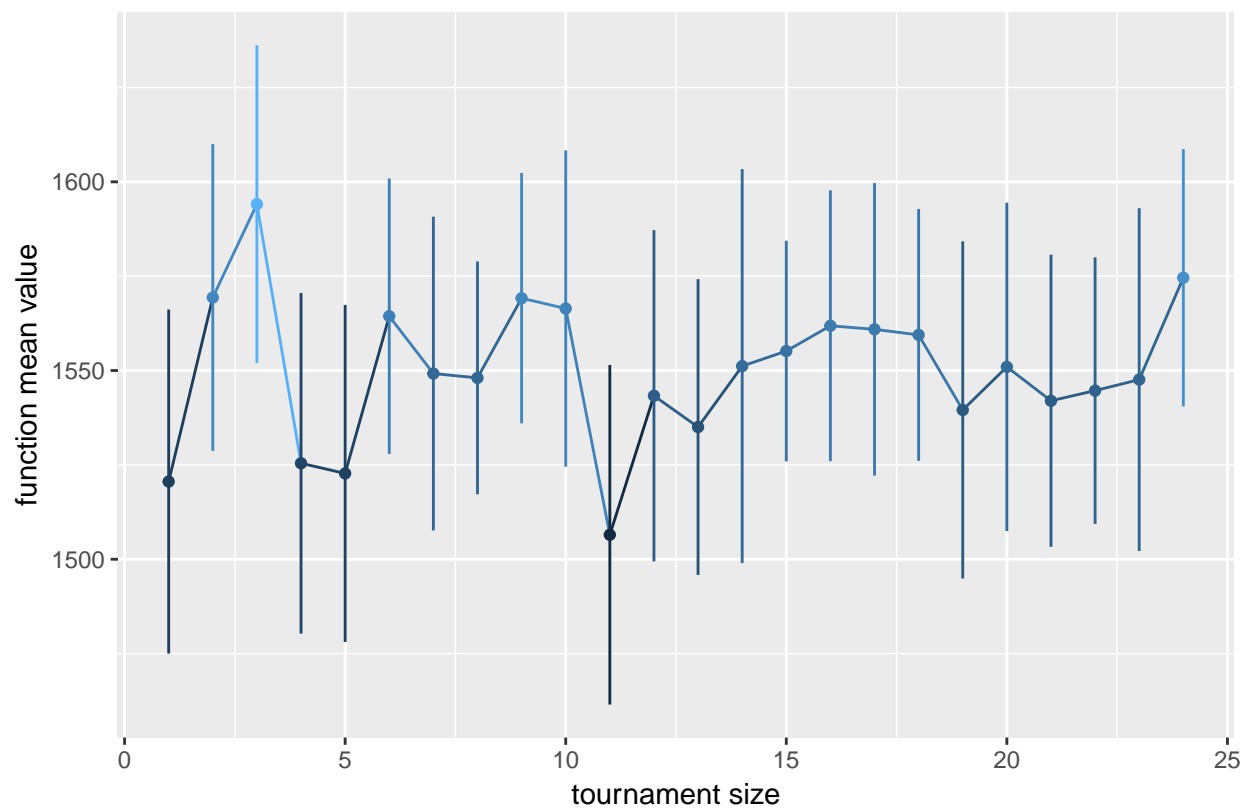
F12 means and C.I.



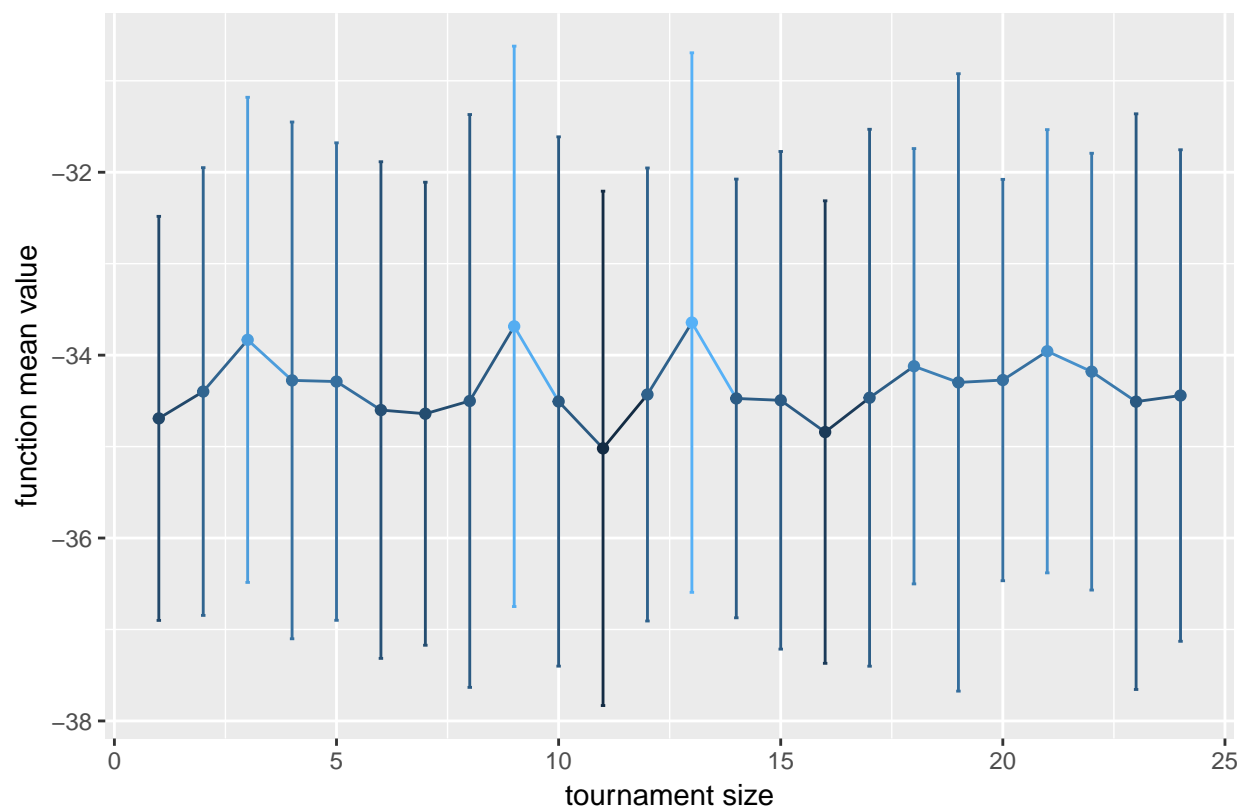
F13 means and std



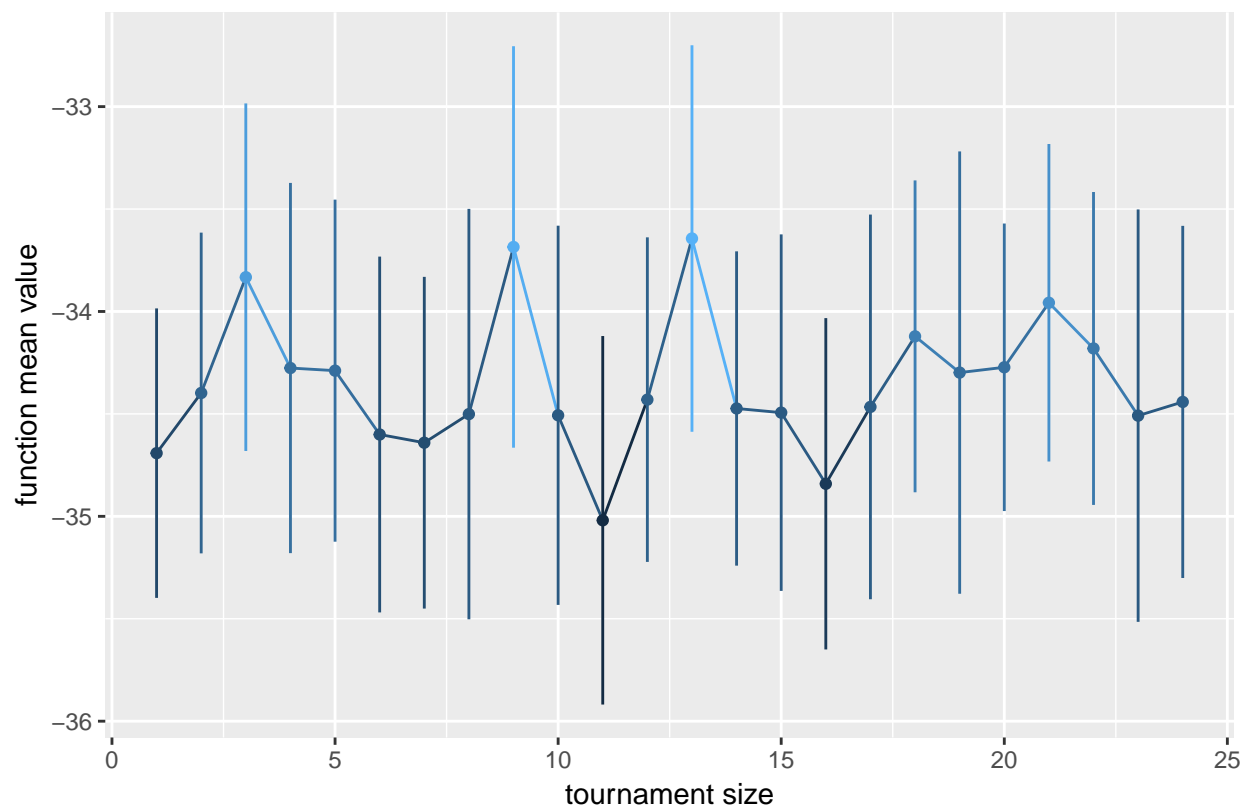
F13 means and C.I.



F14 means and std

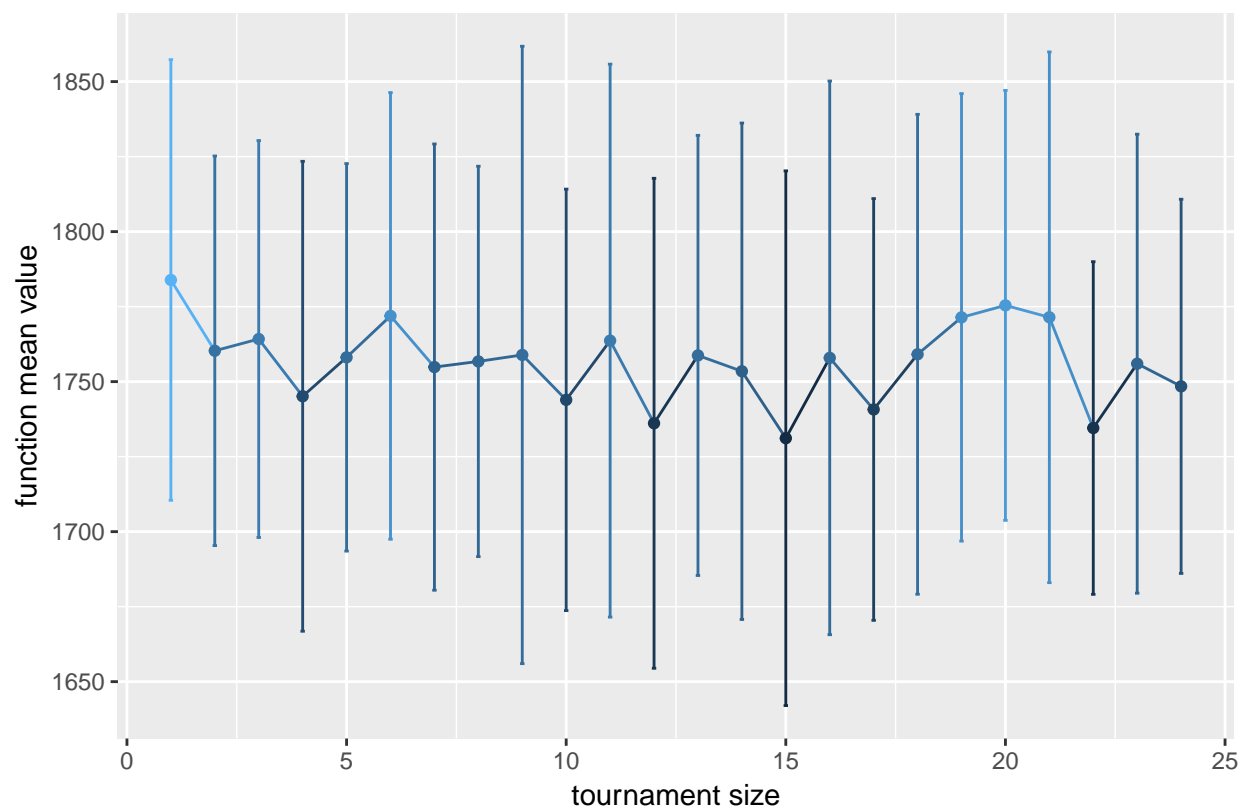


F14 means and C.I.

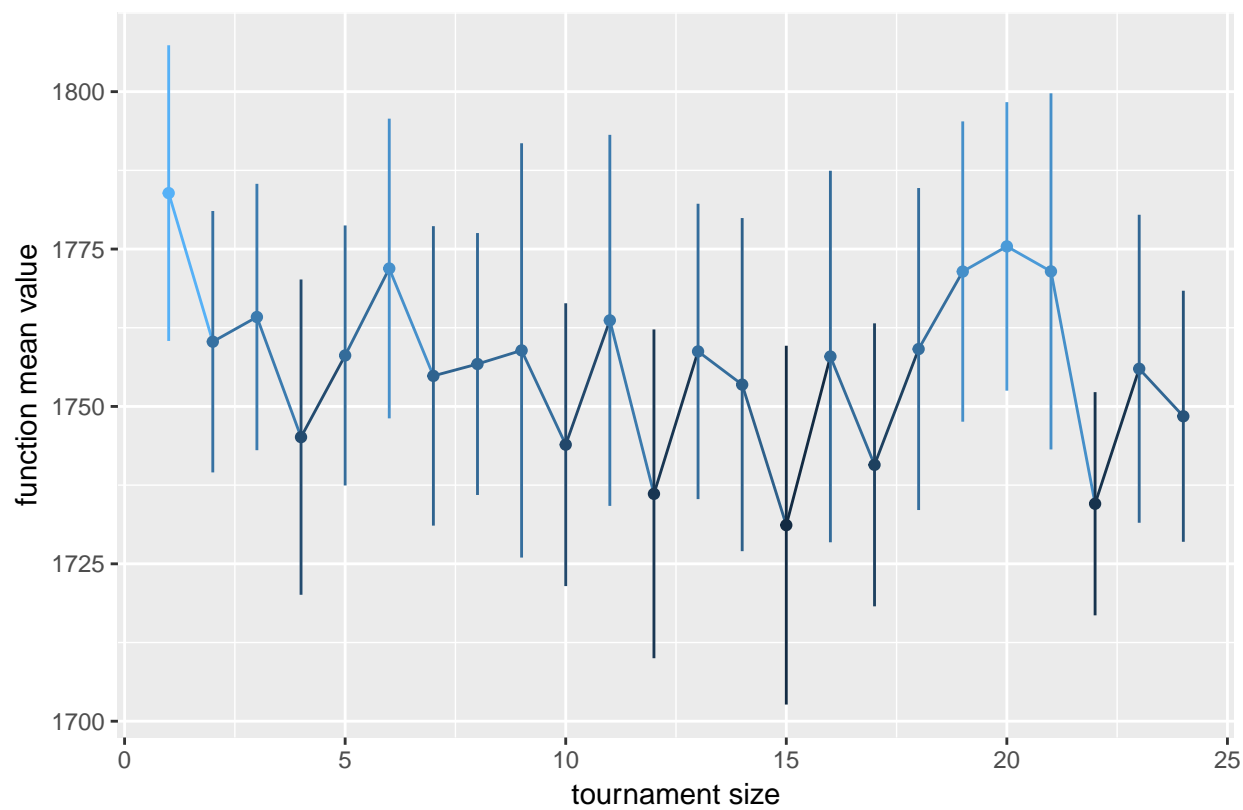




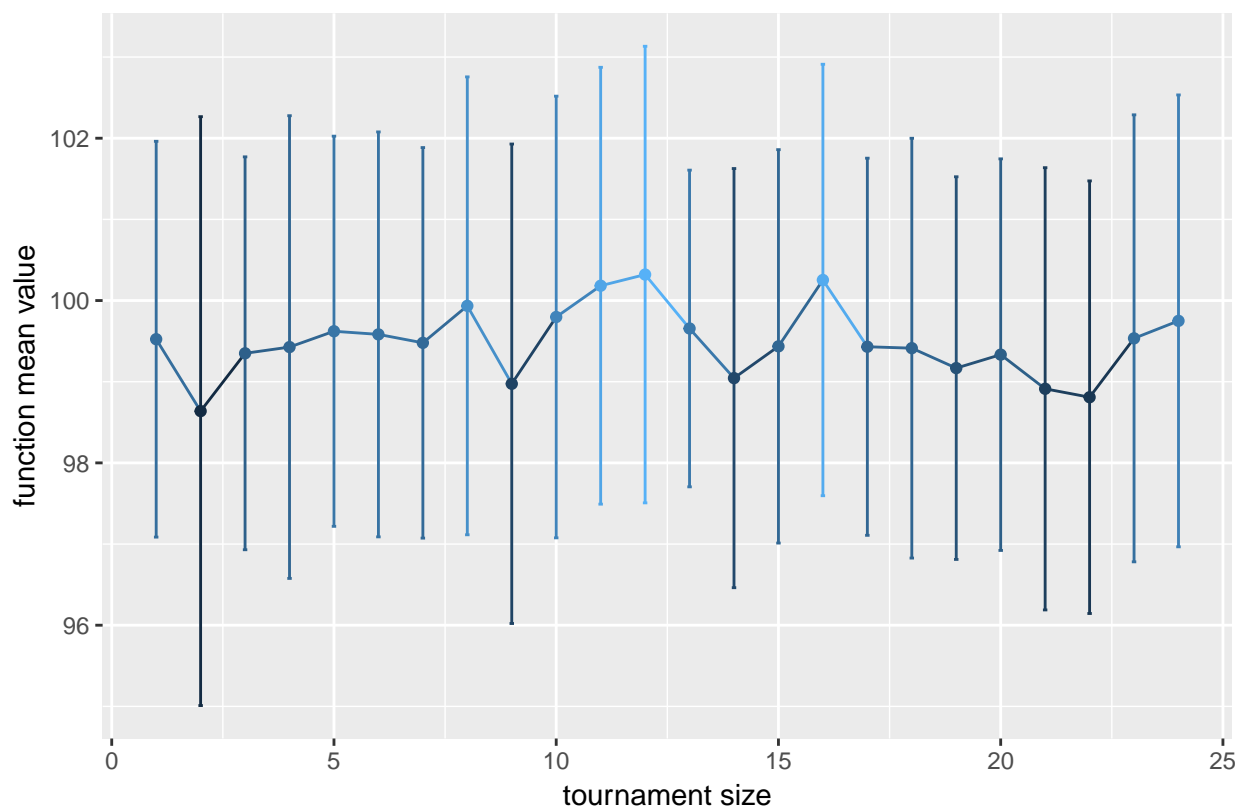
F15 means and std



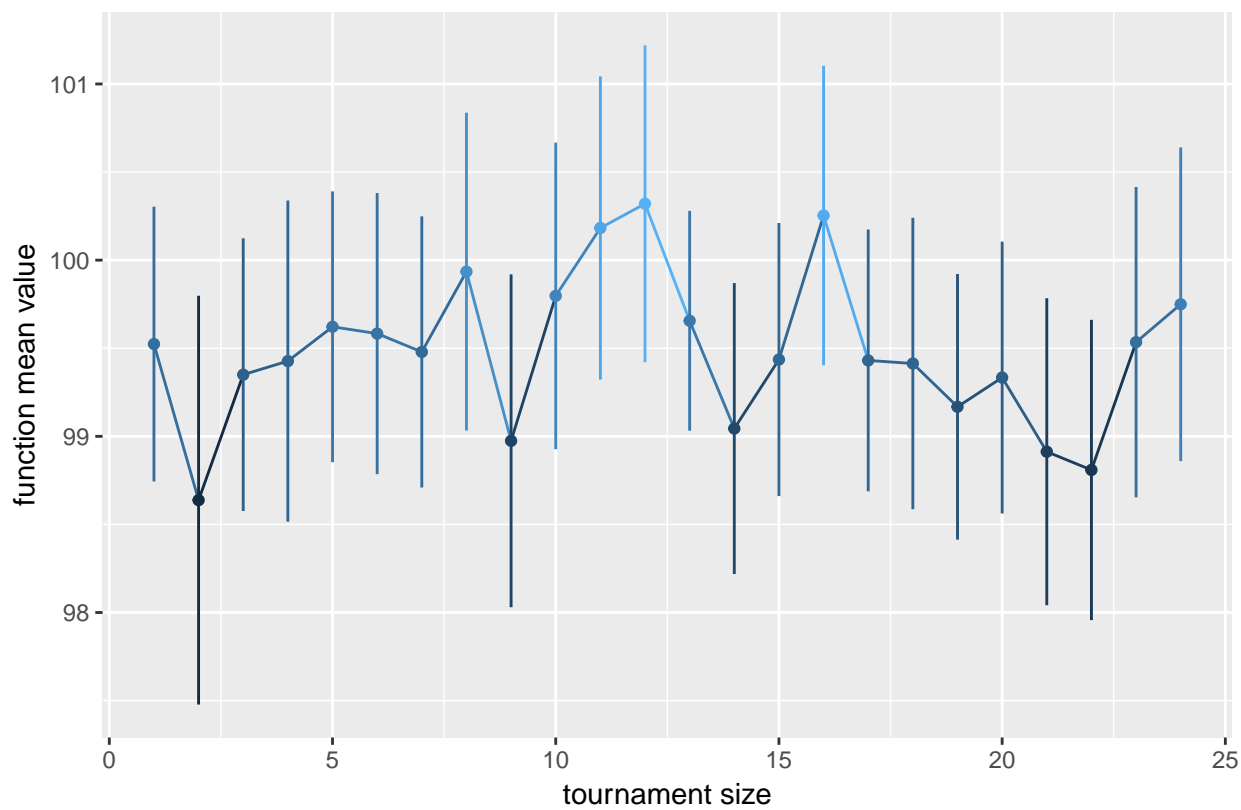
F15 means and C.I.



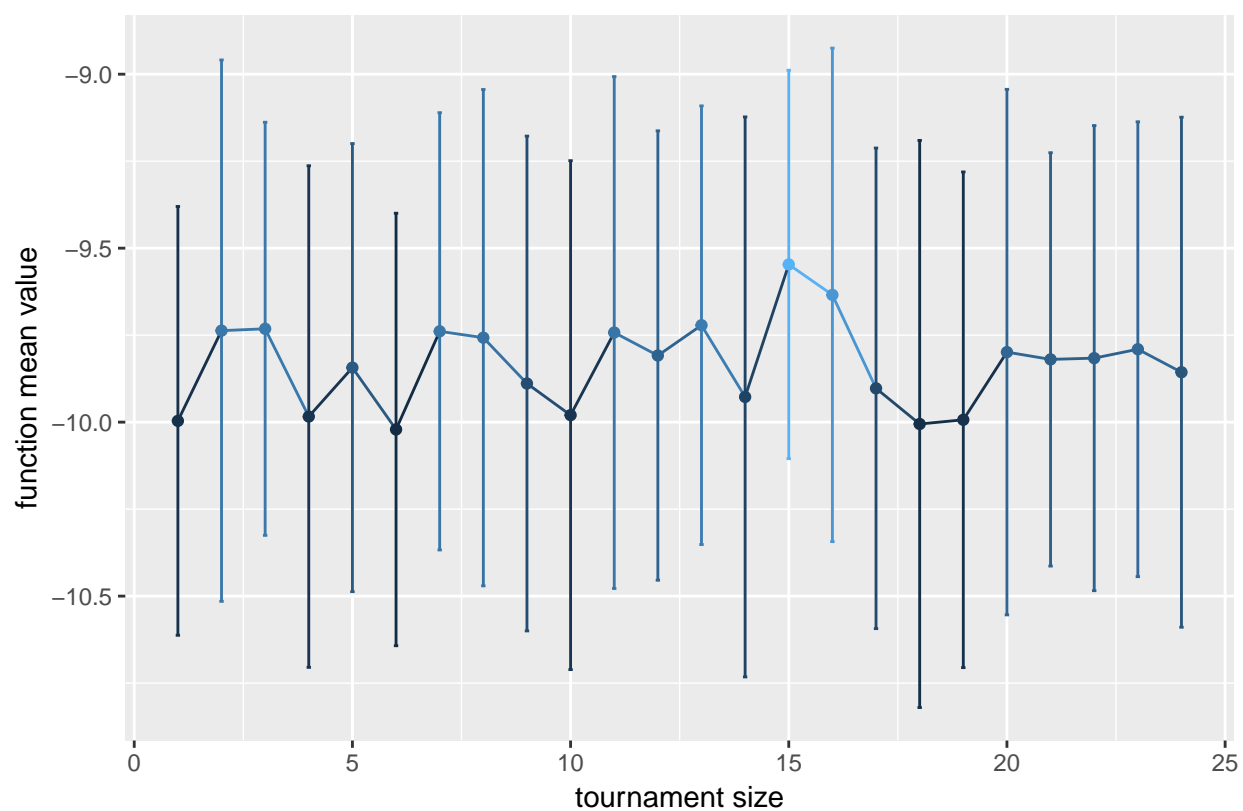
F16 means and std



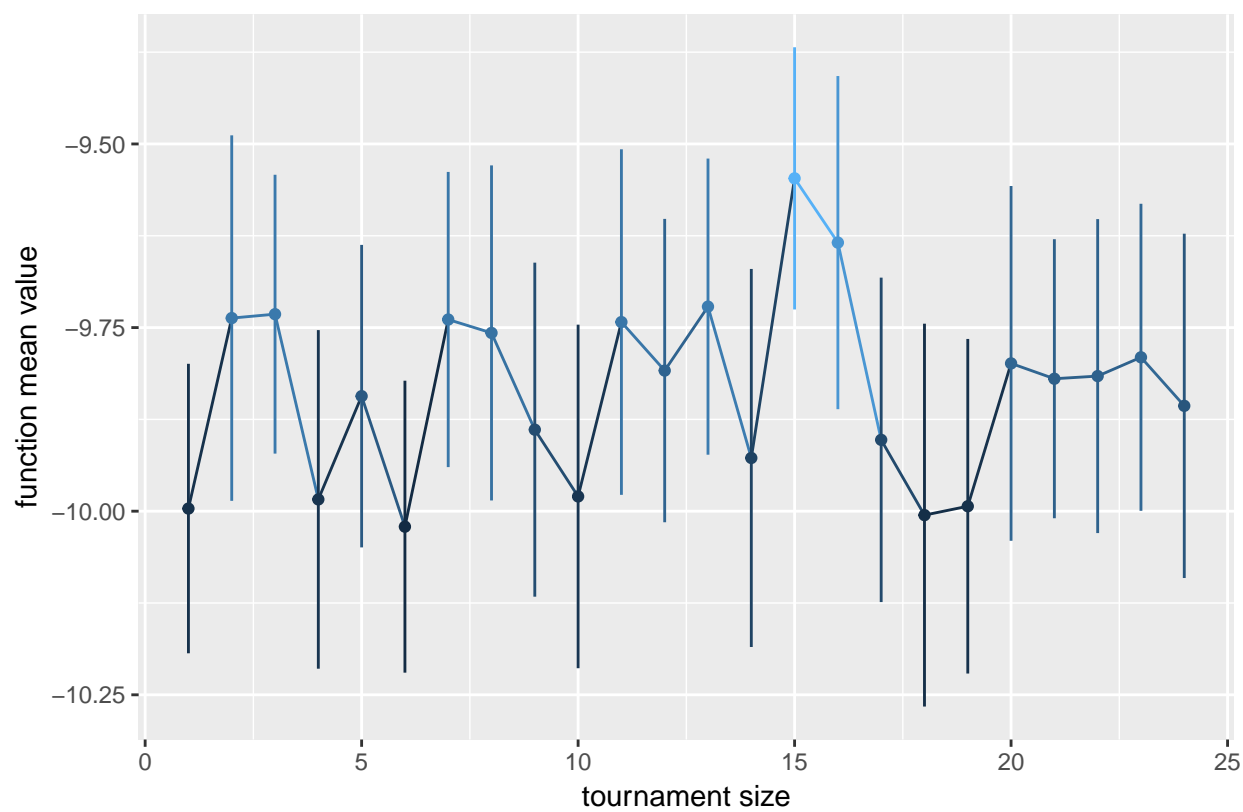
F16 means and C.I.



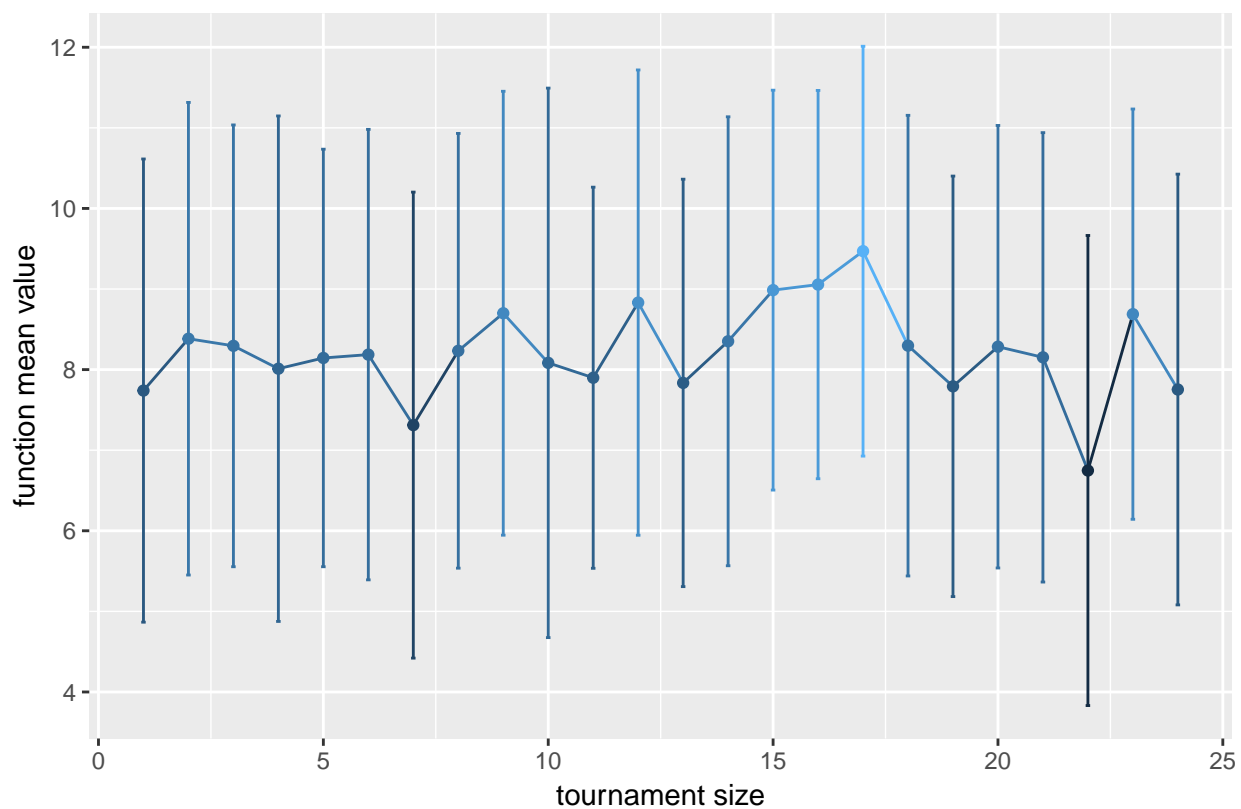
F17 means and std



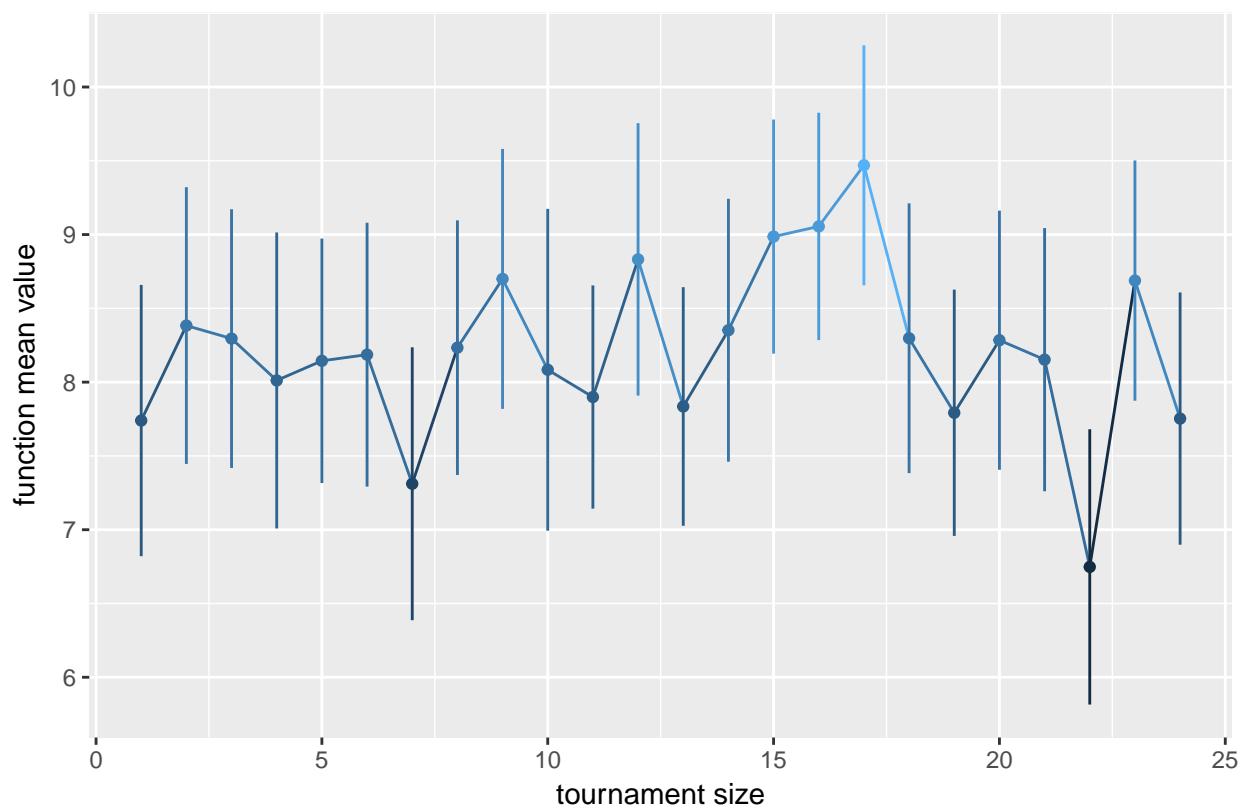
F17 means and C.I.



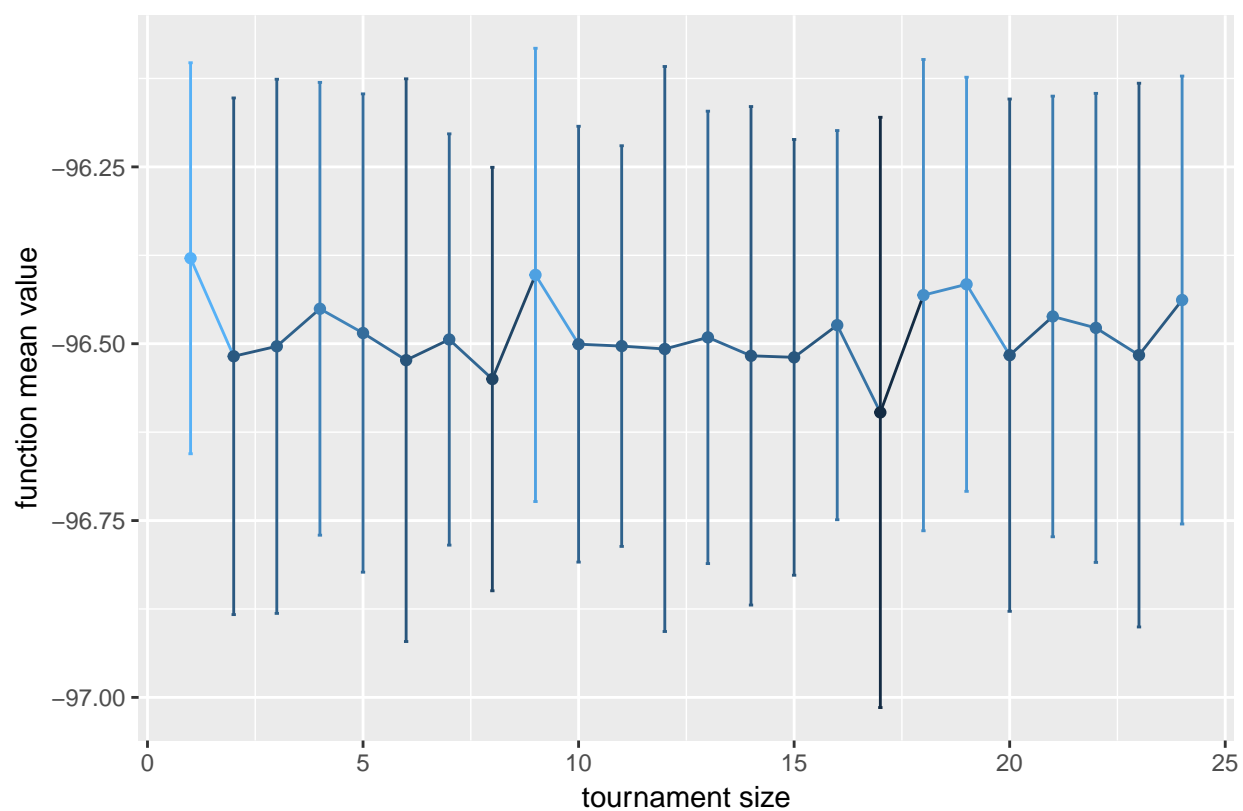
F18 means and std



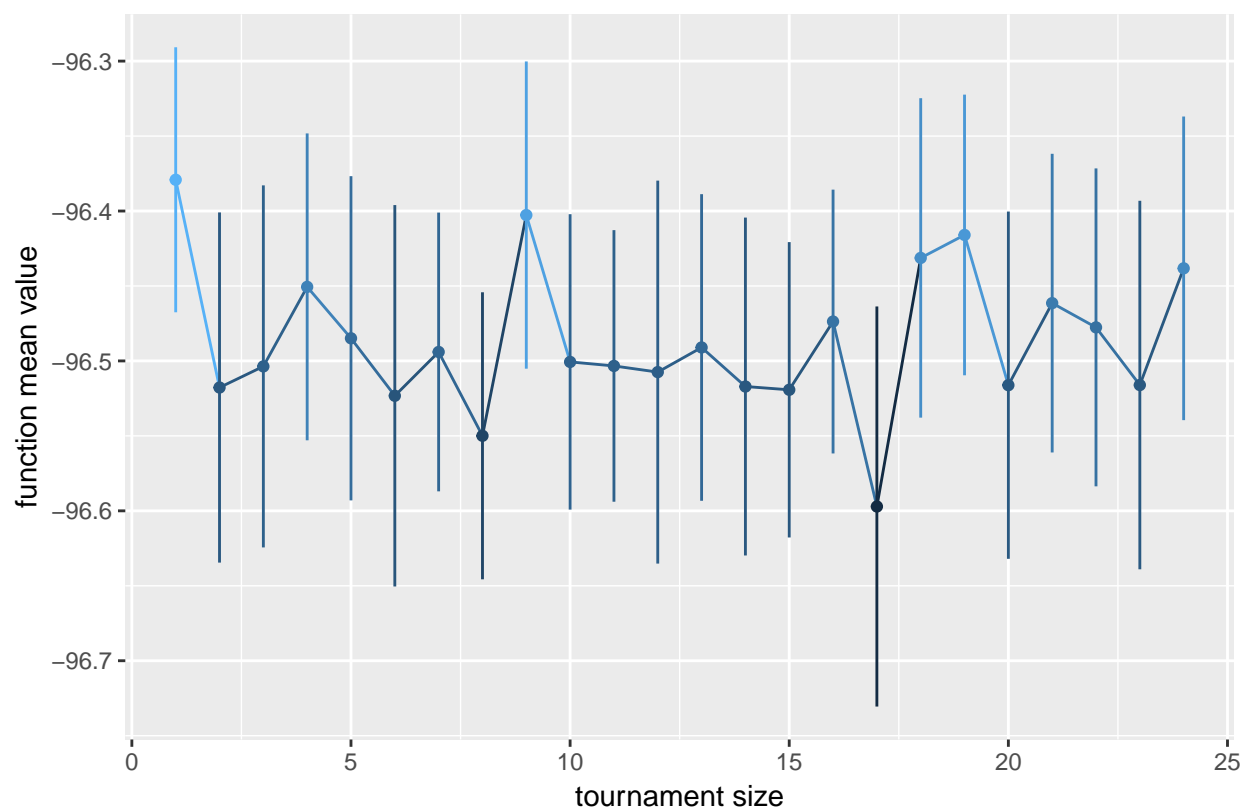
F18 means and C.I.

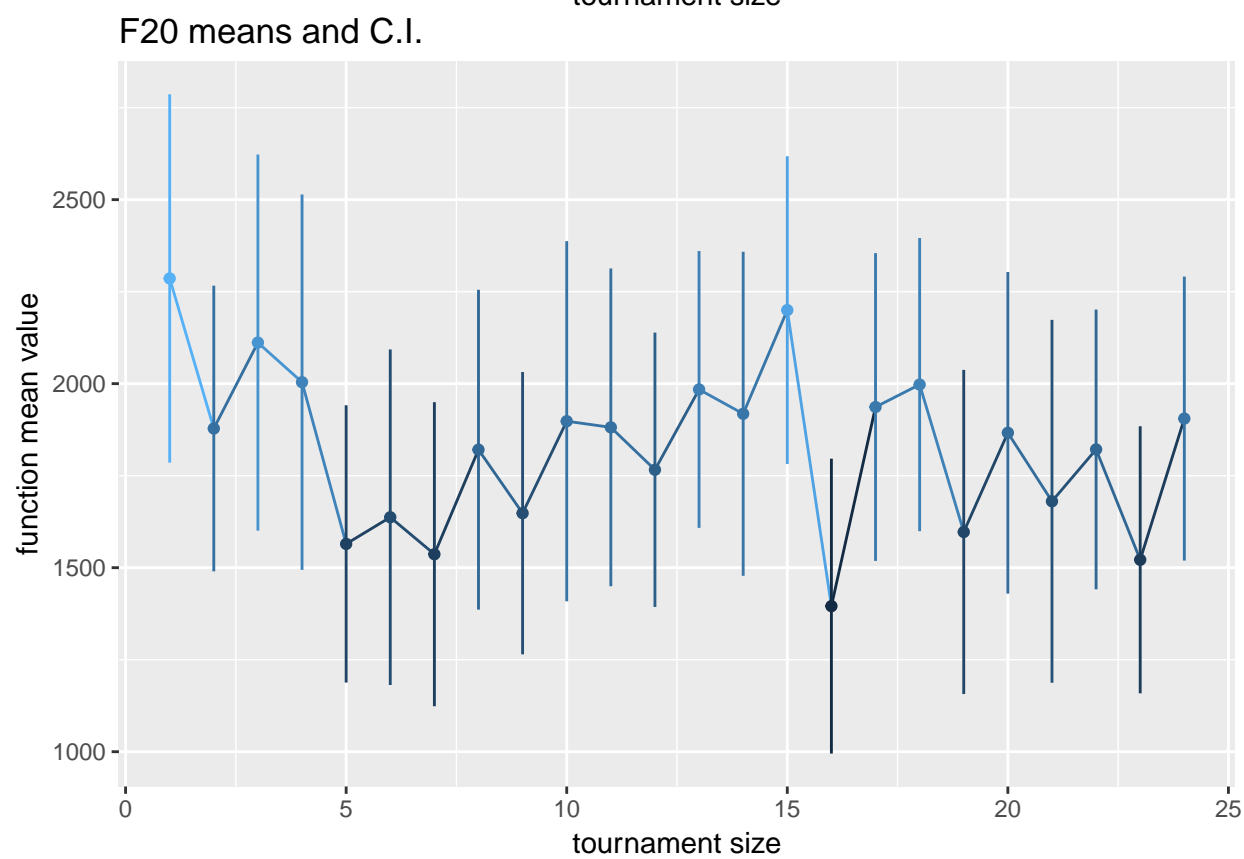
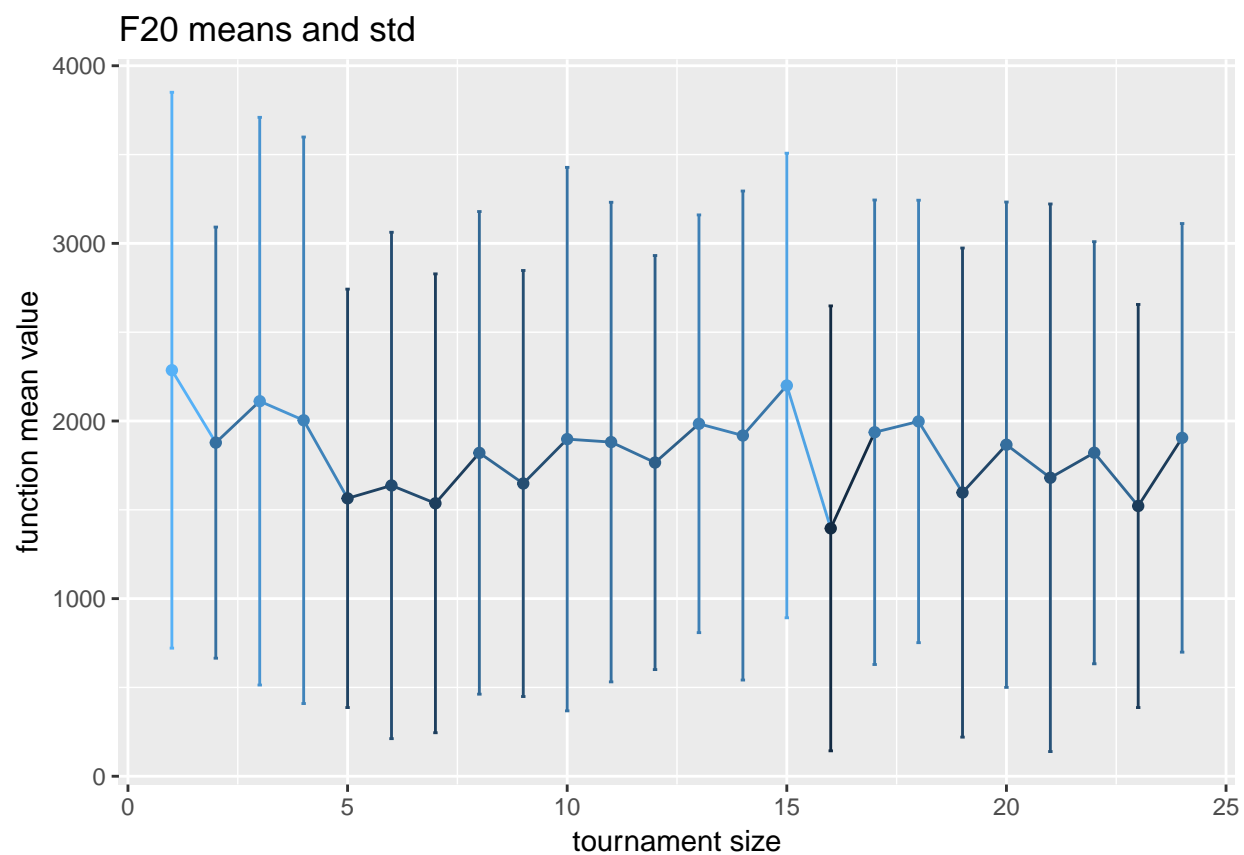


F19 means and std

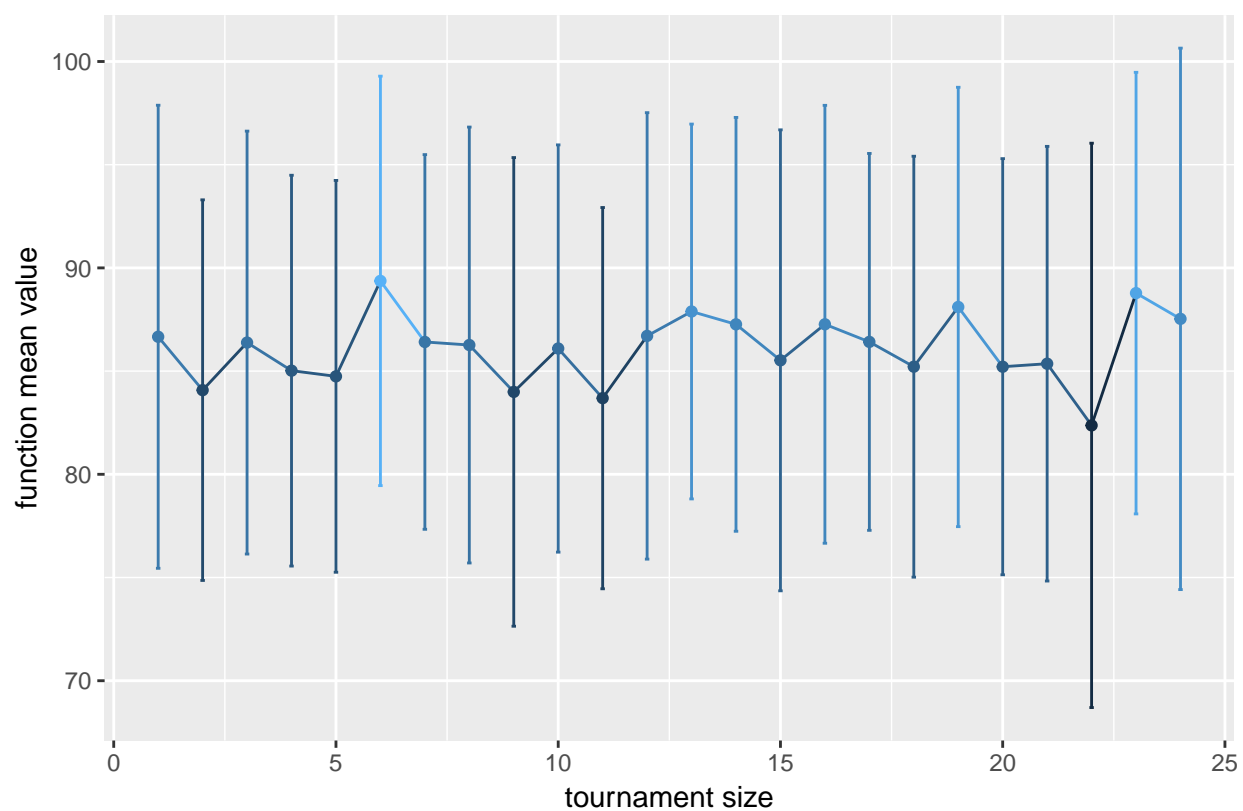


F19 means and C.I.

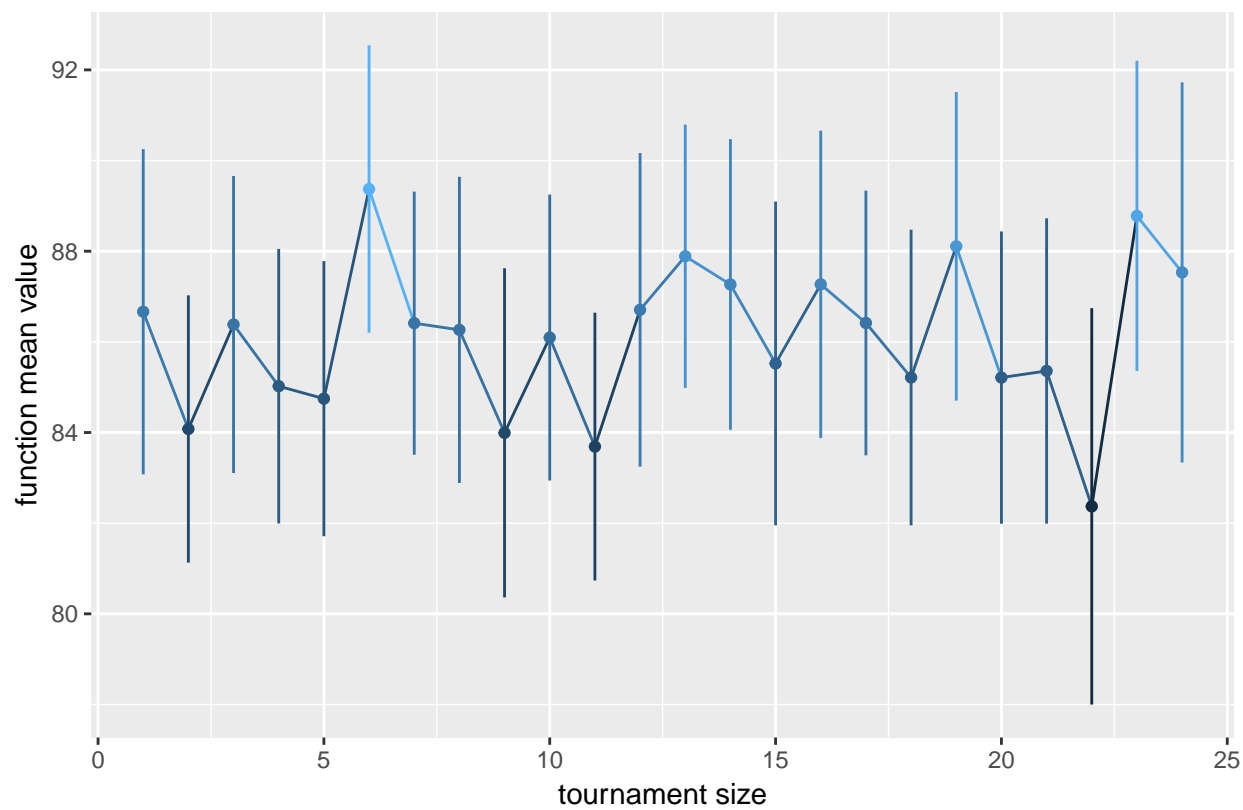




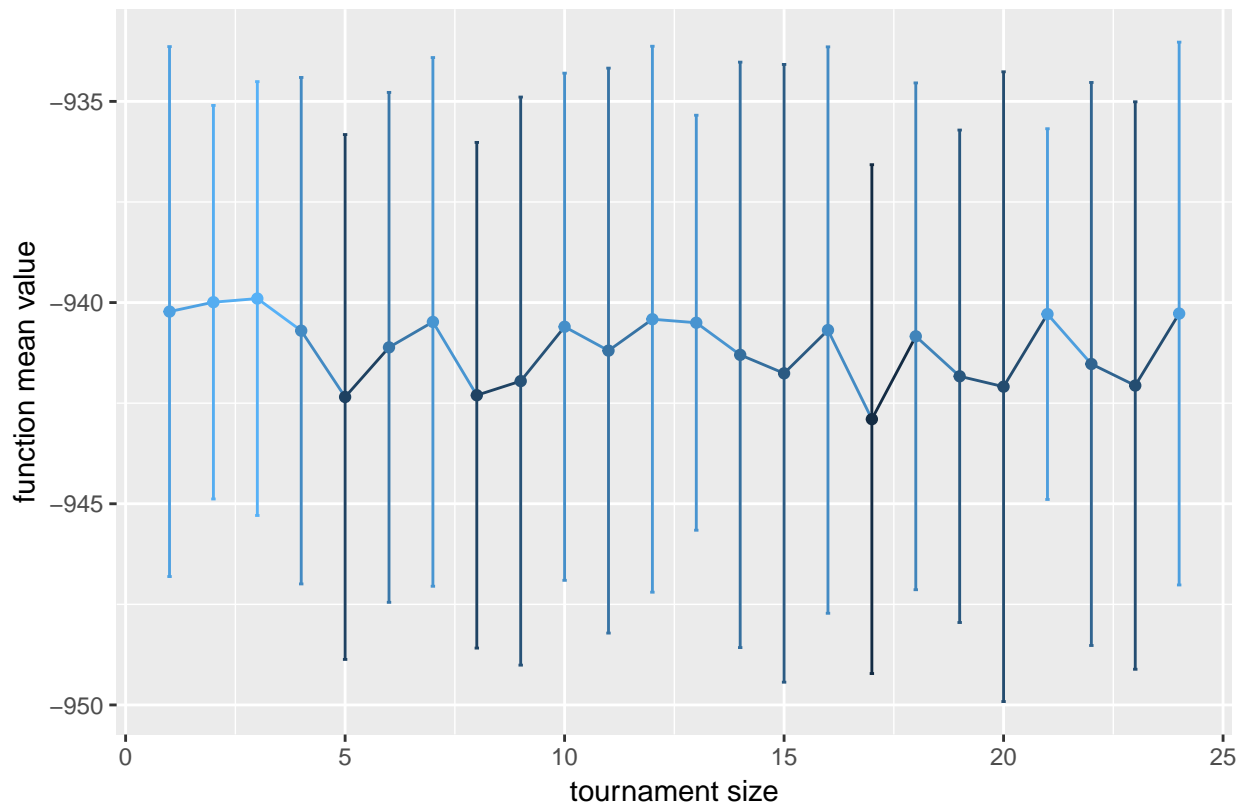
F21 means and std



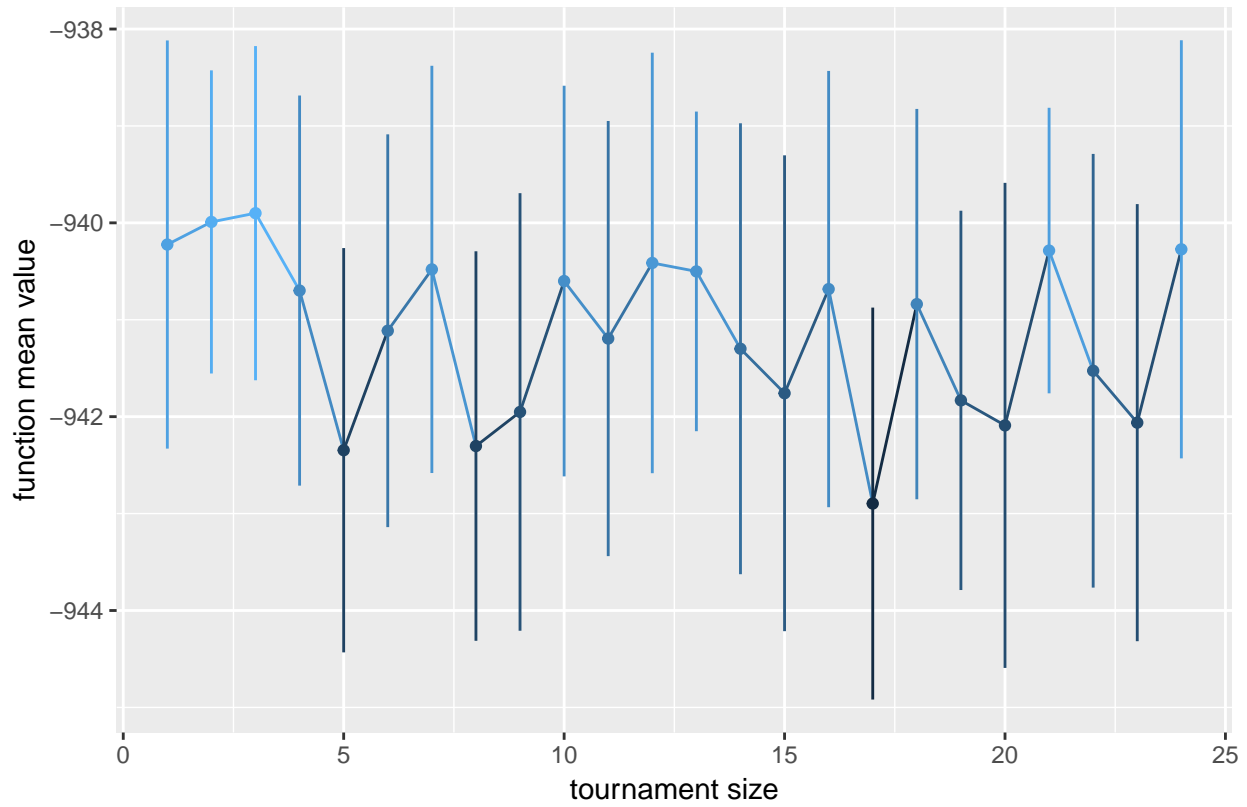
F21 means and C.I.



F22 means and std

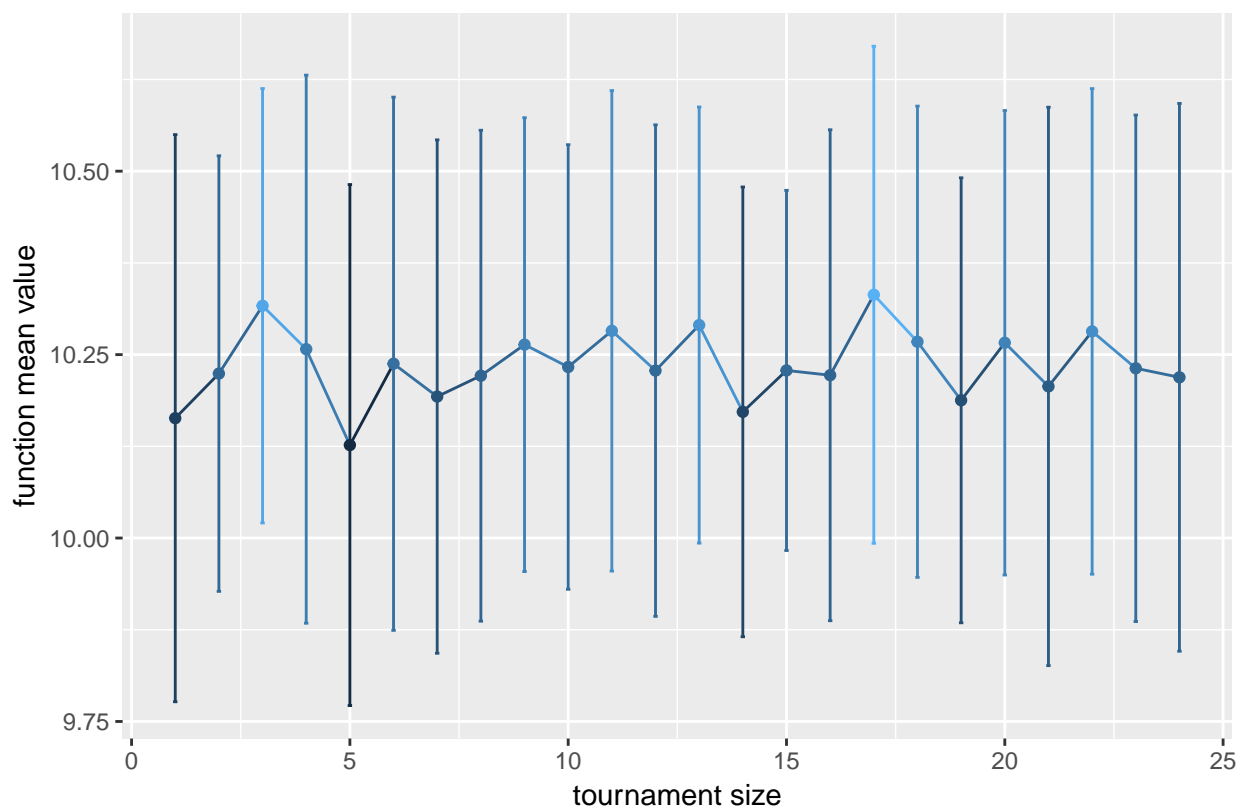


F22 means and C.I.

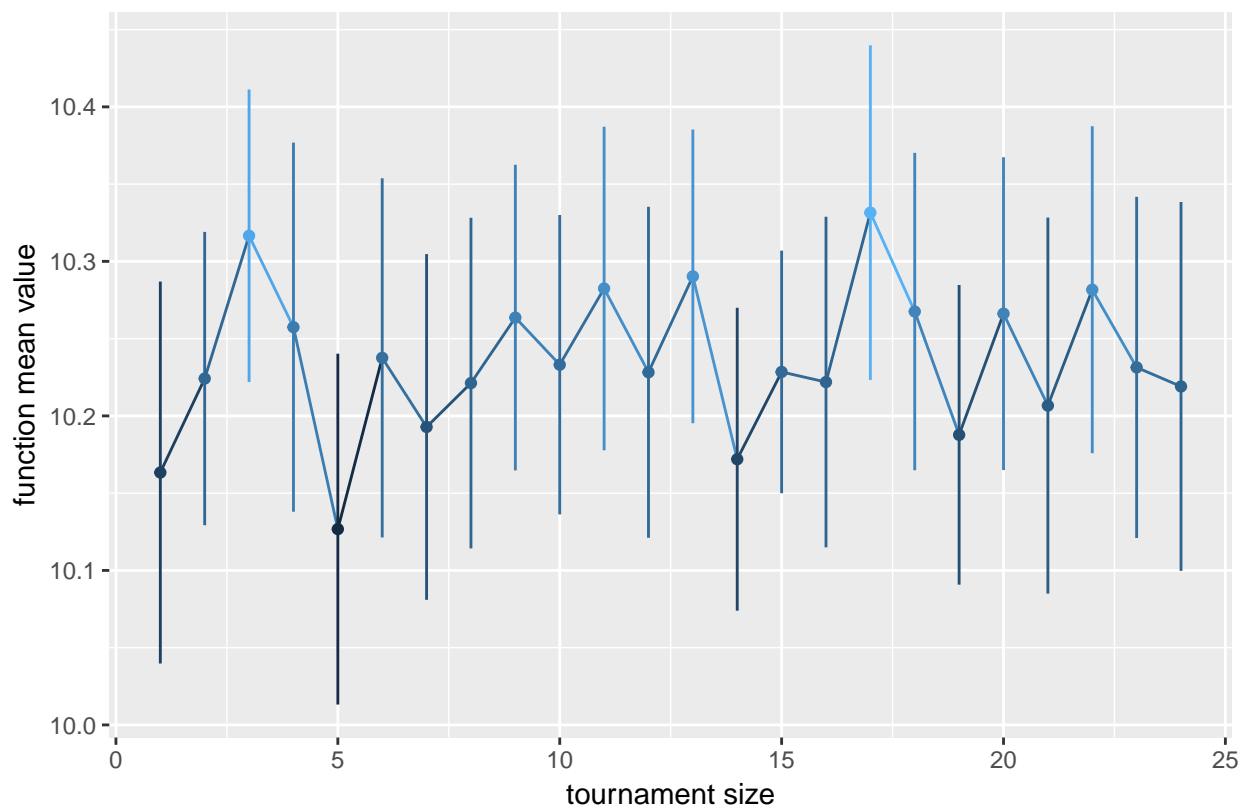




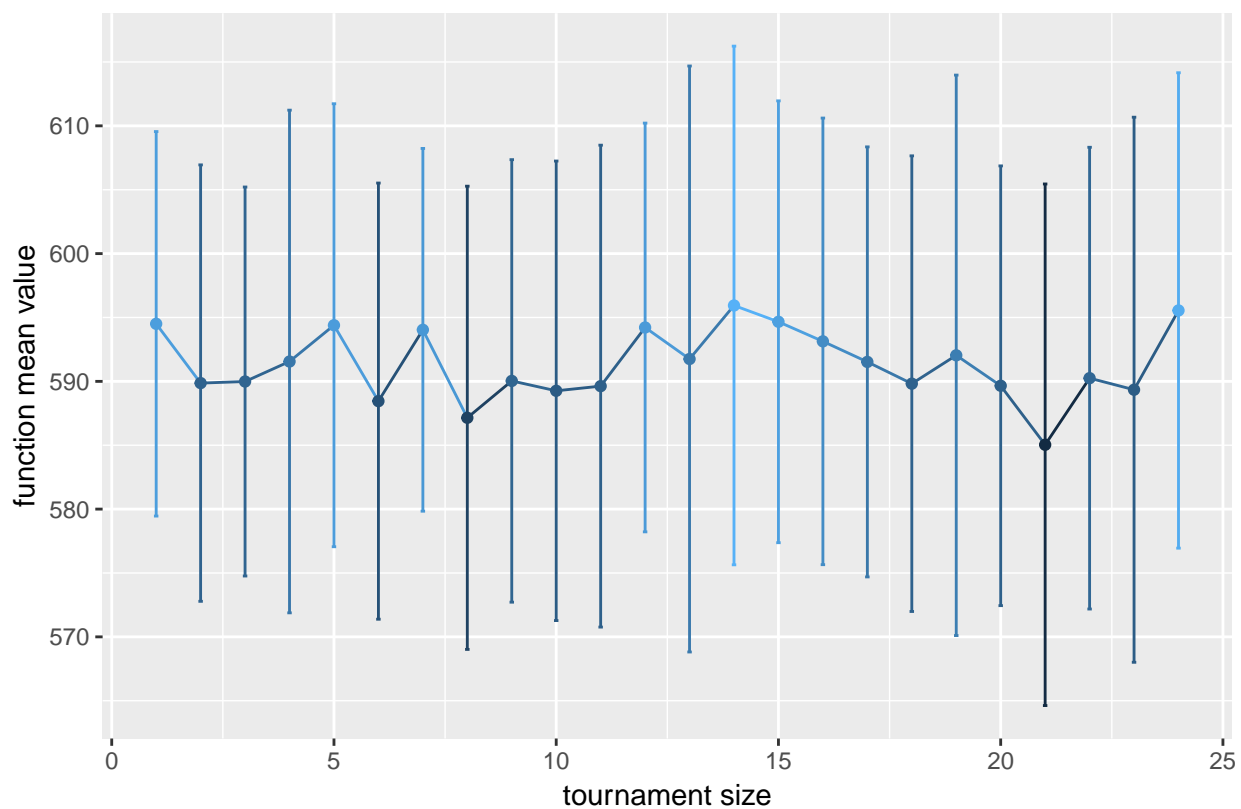
F23 means and std



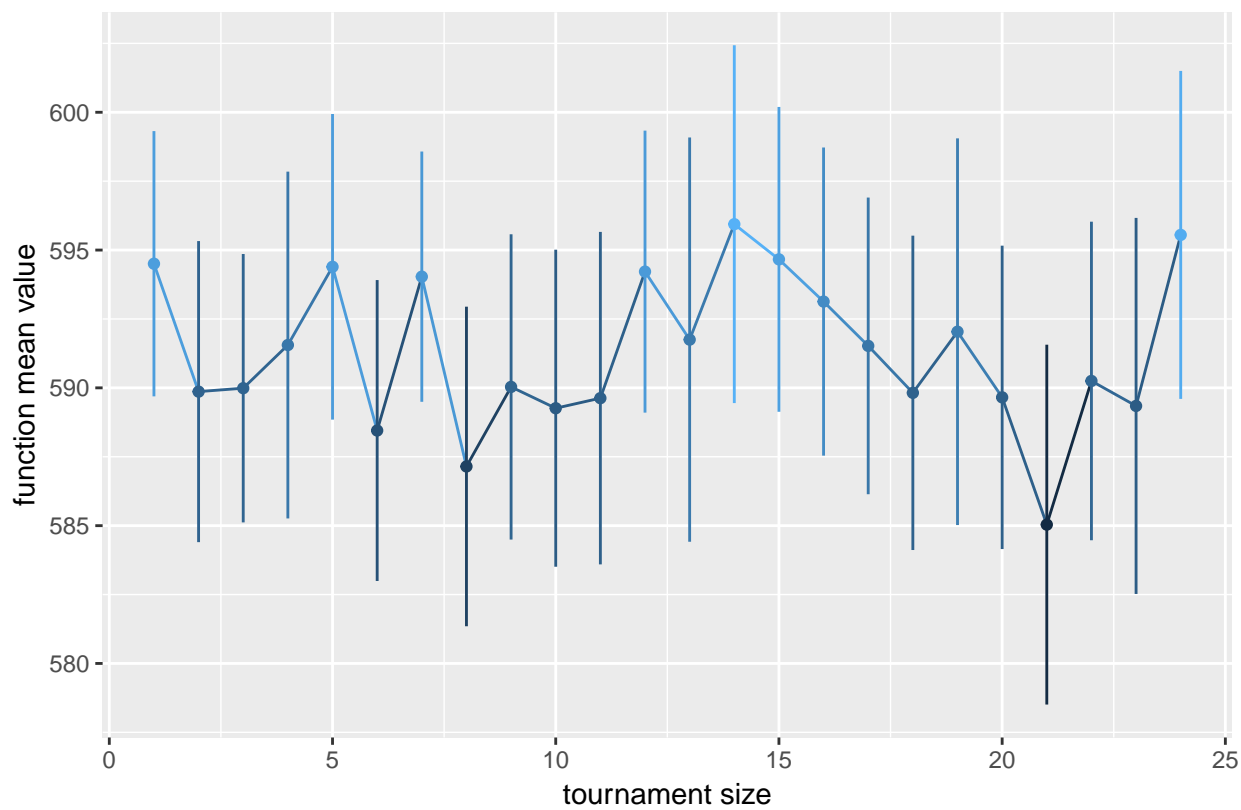
F23 means and C.I.



F24 means and std

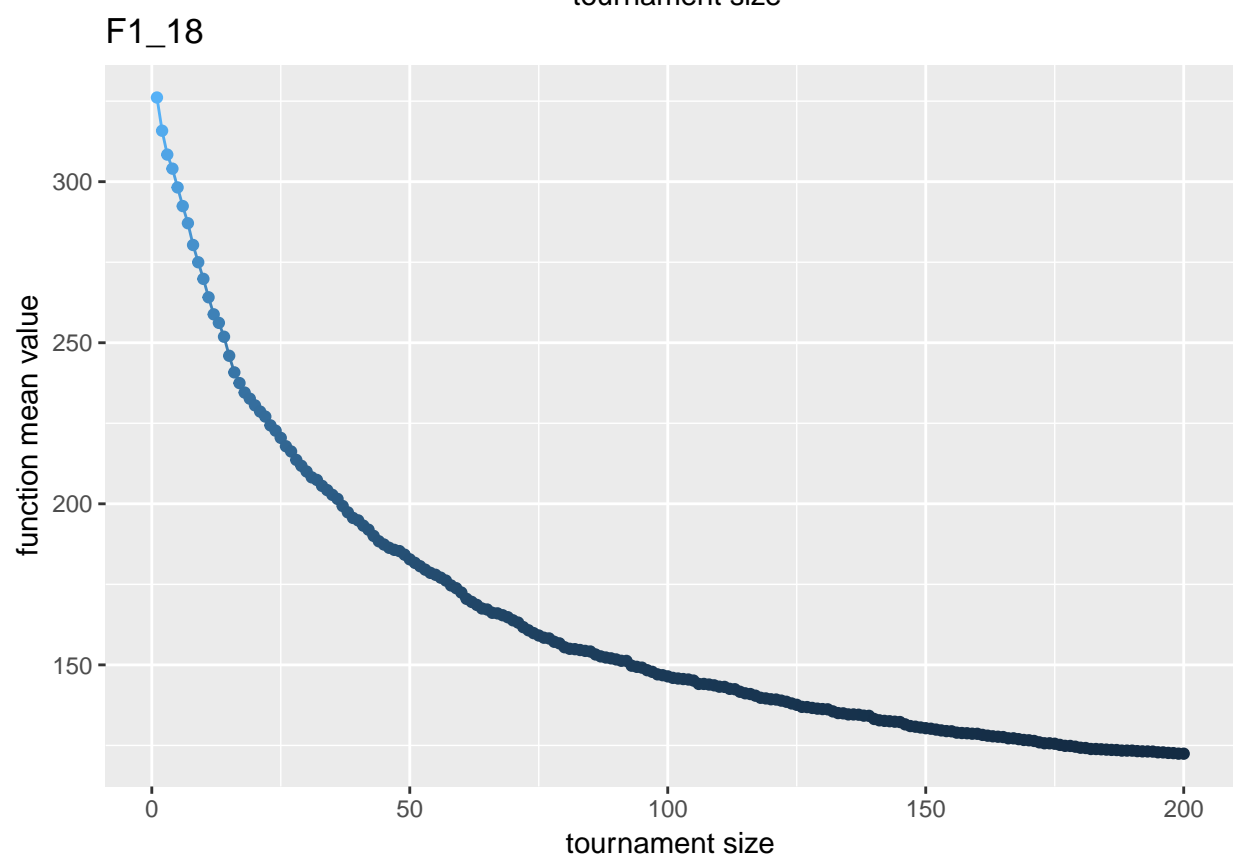
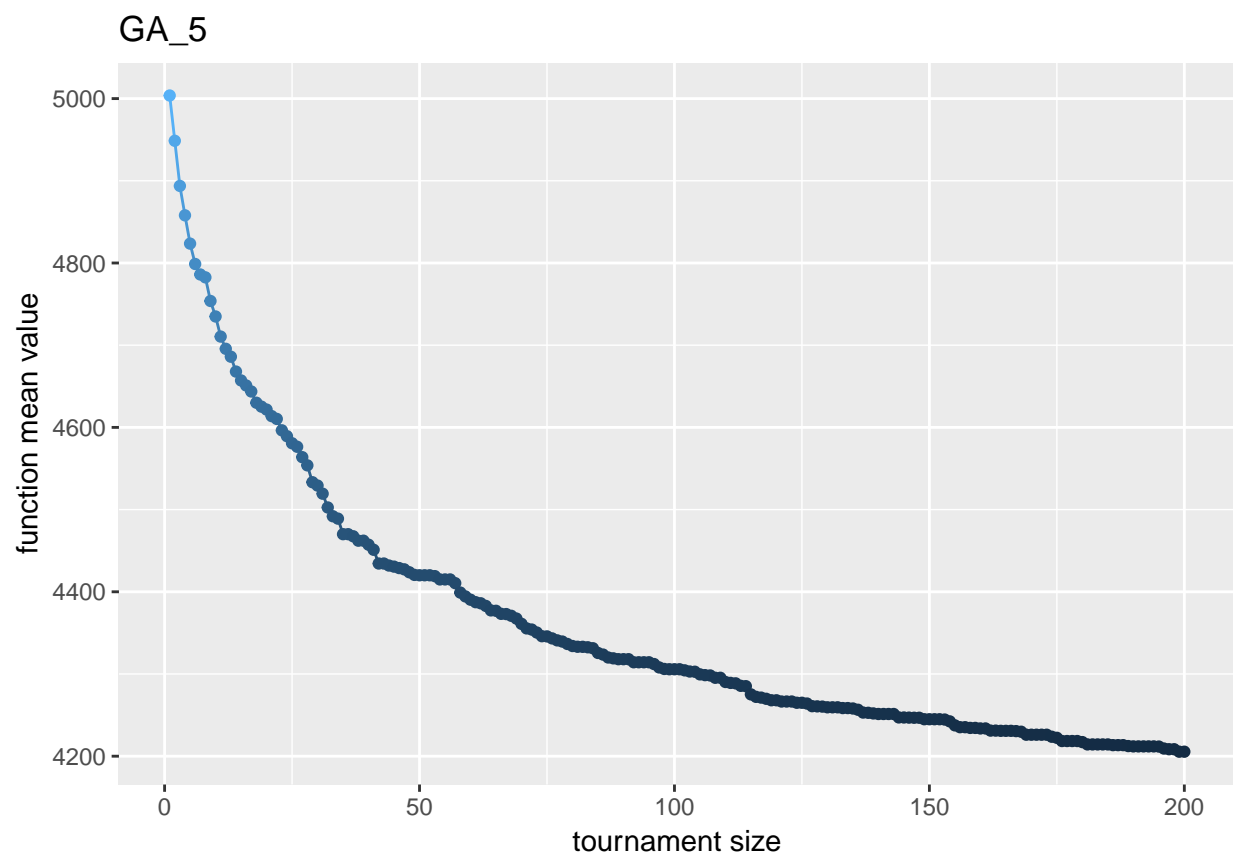


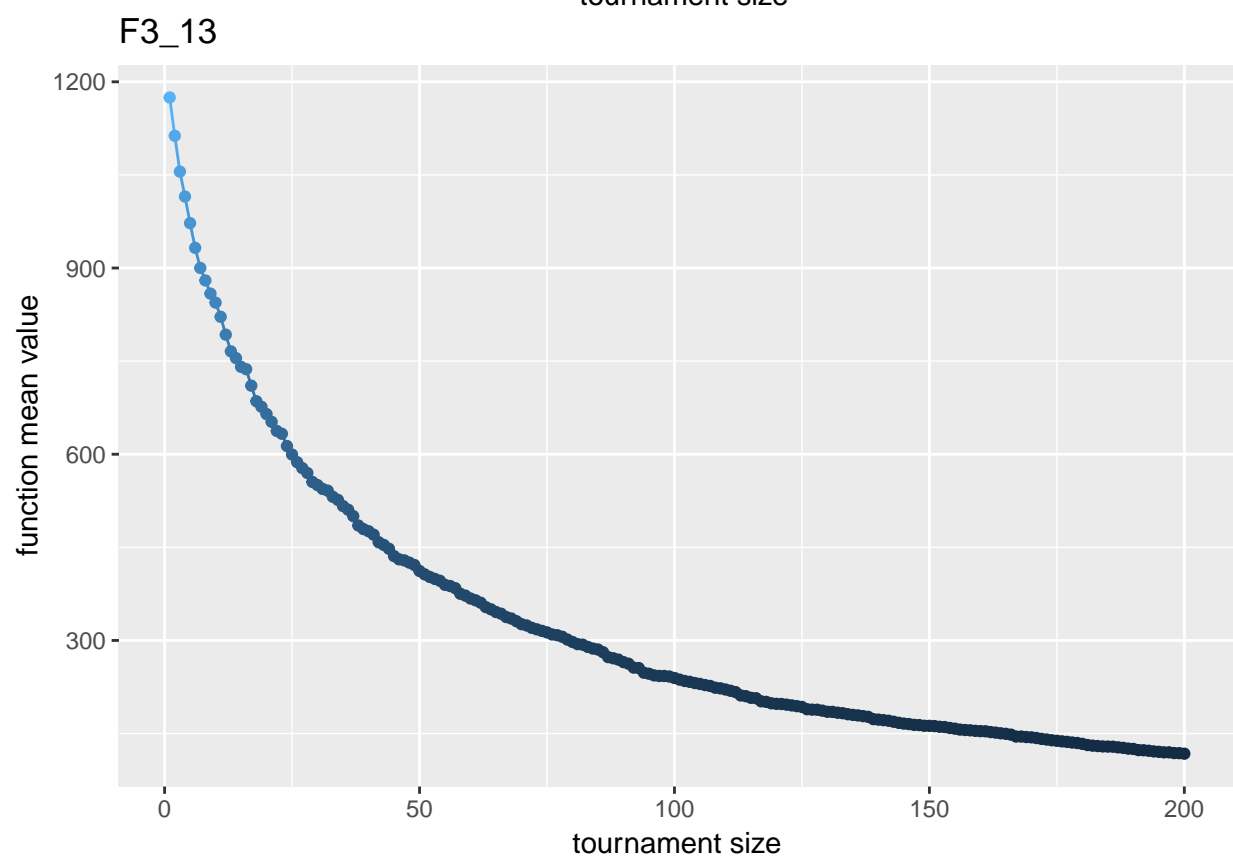
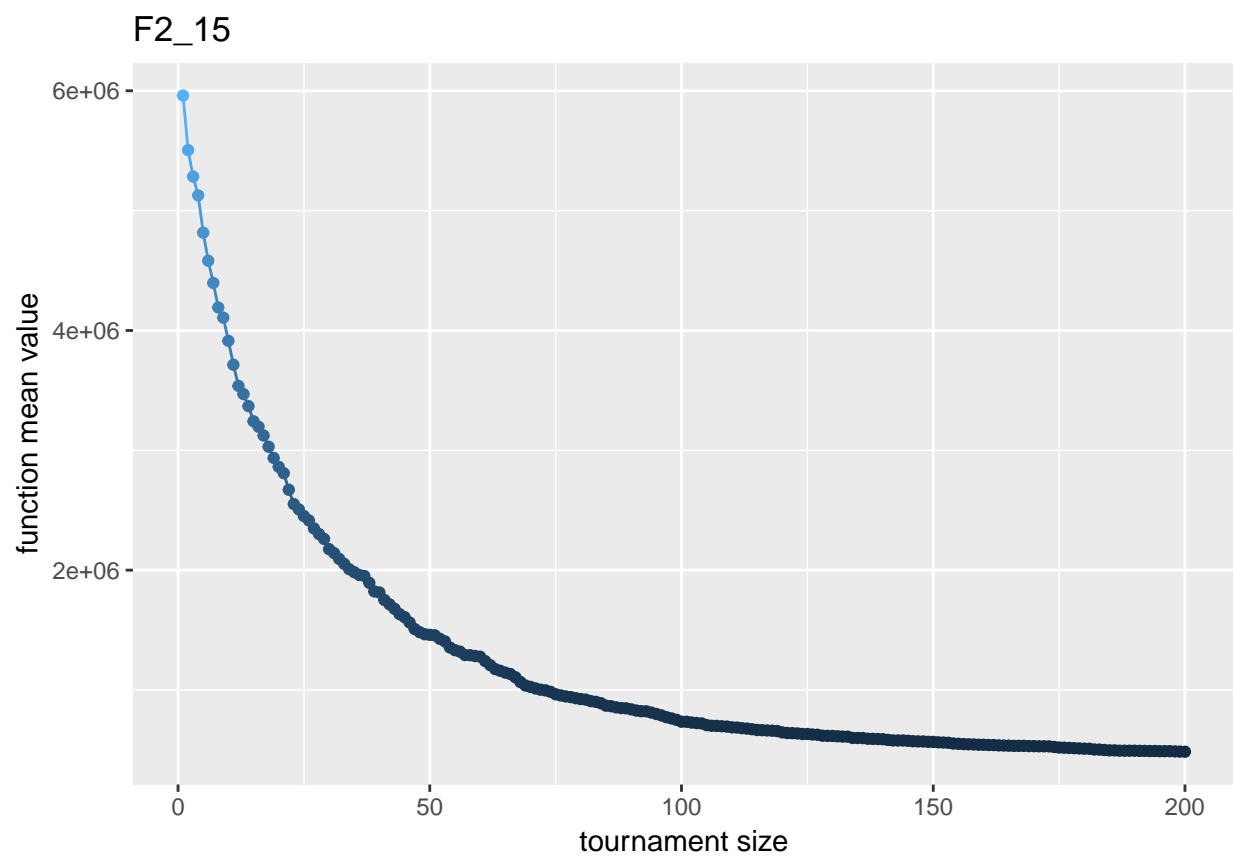
F24 means and C.I.

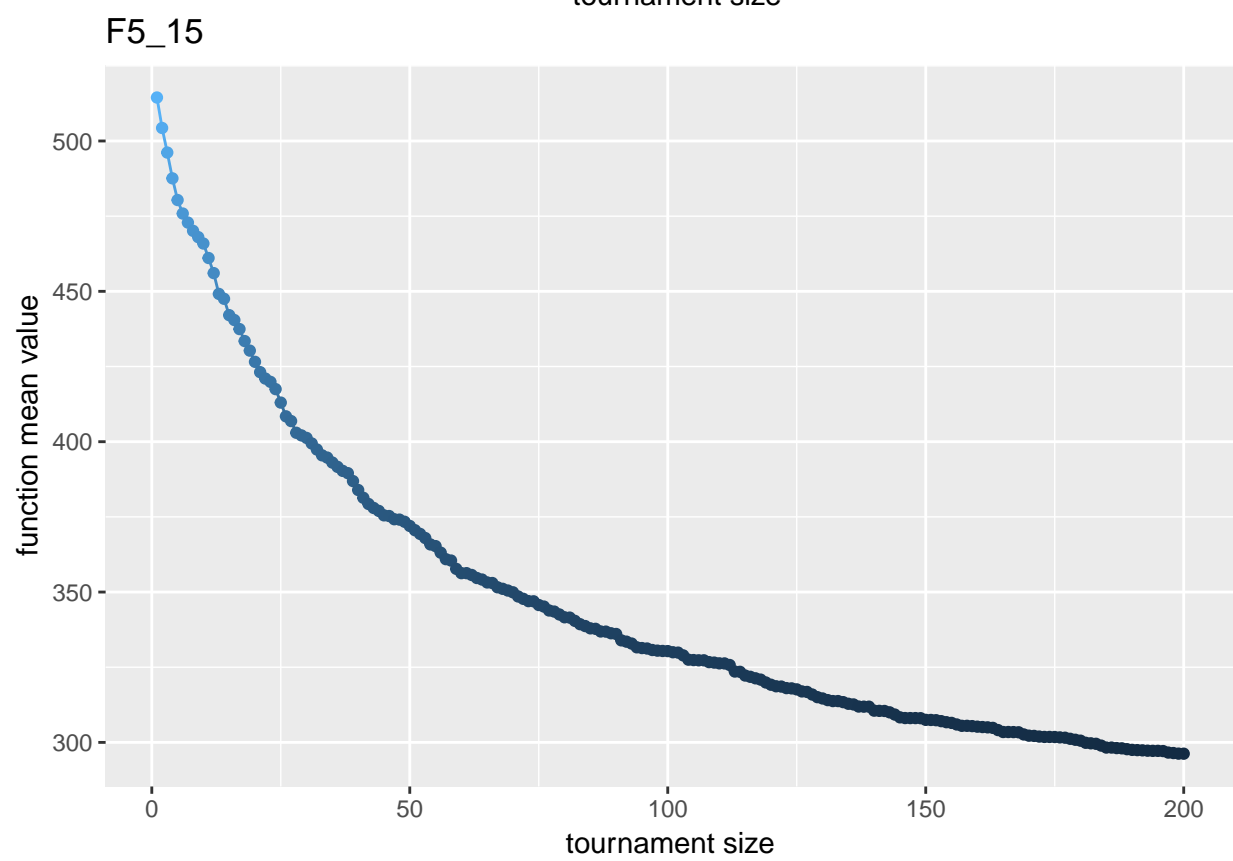
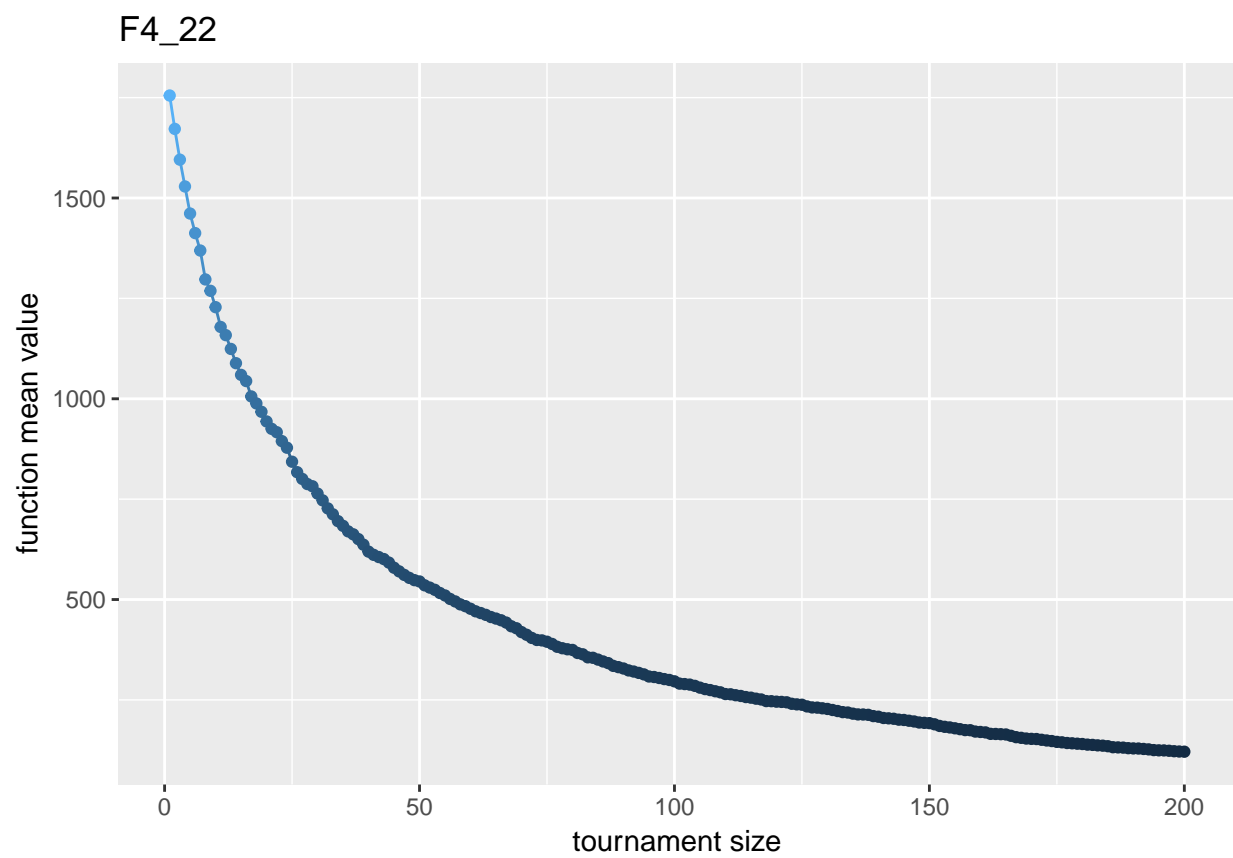


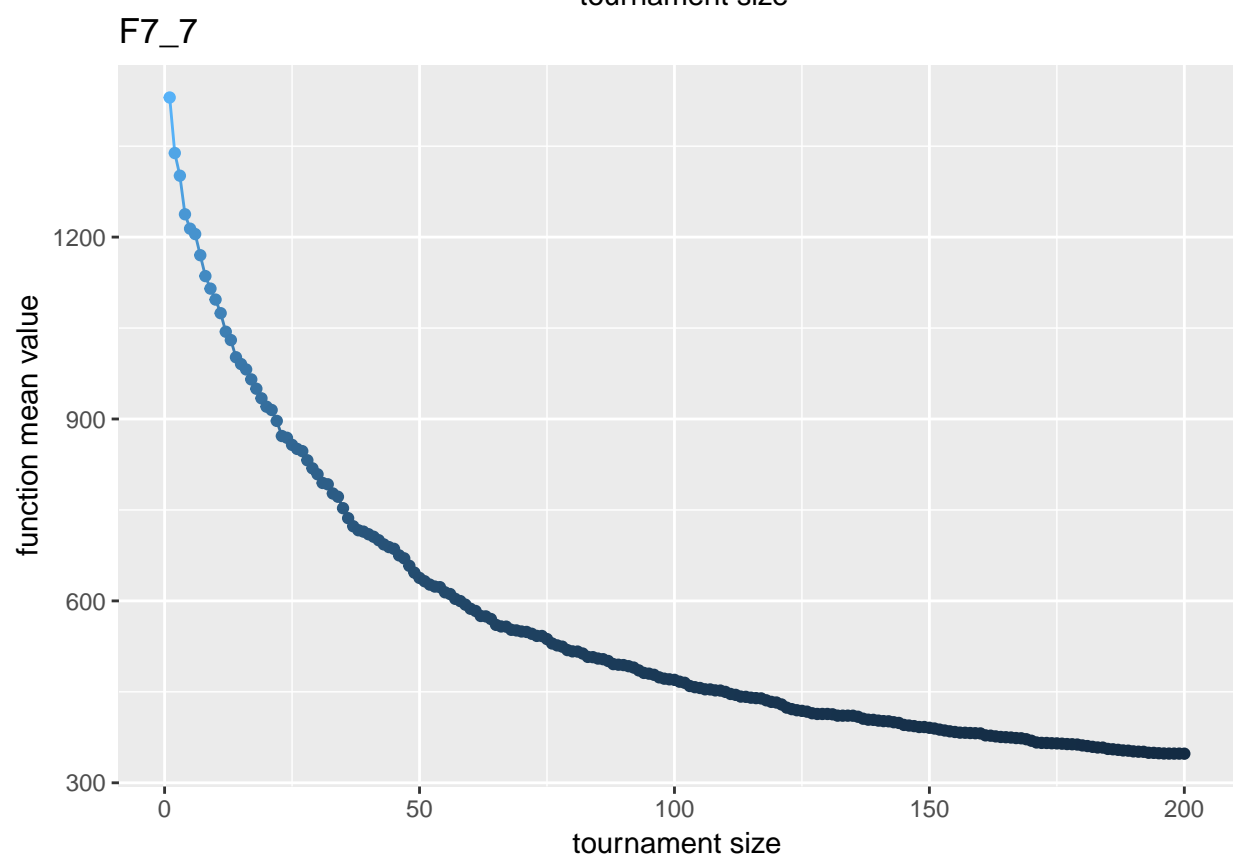
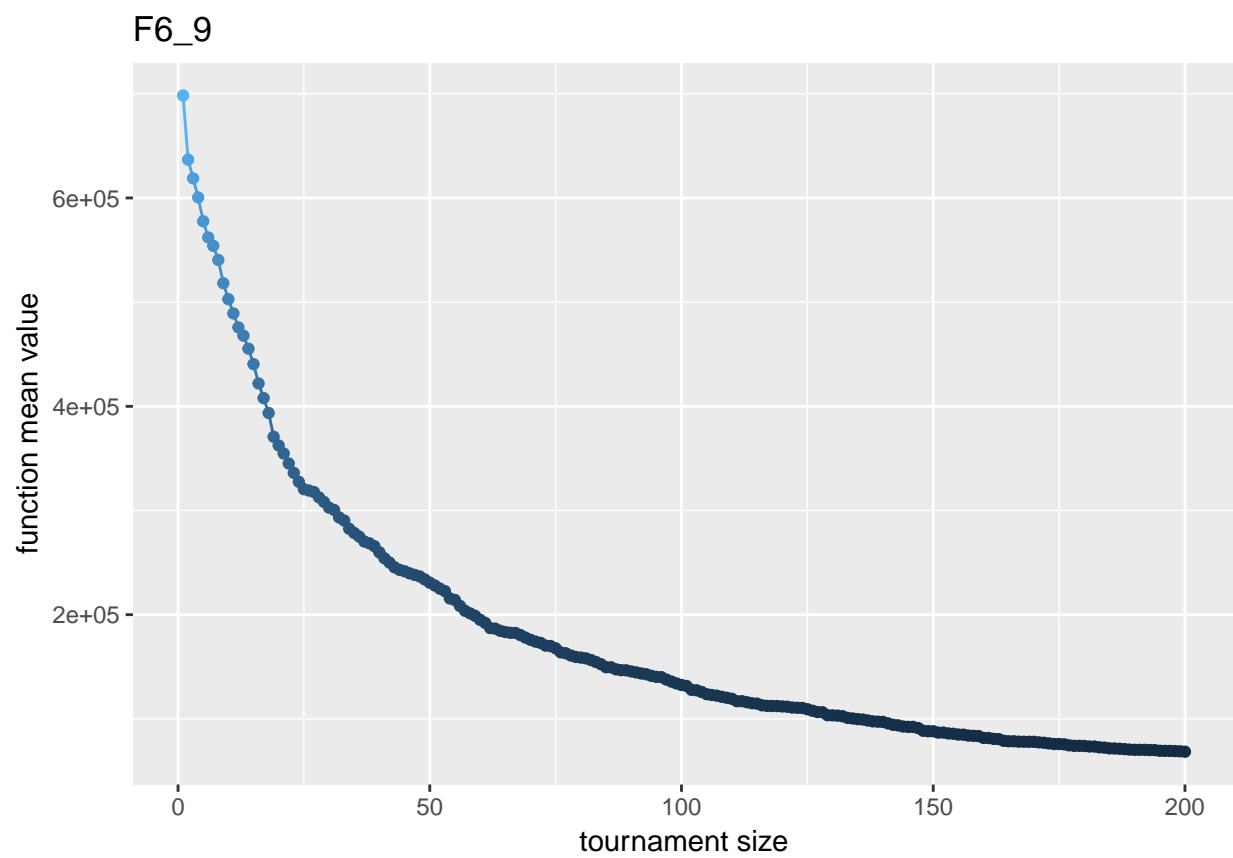
## Convergency Plots

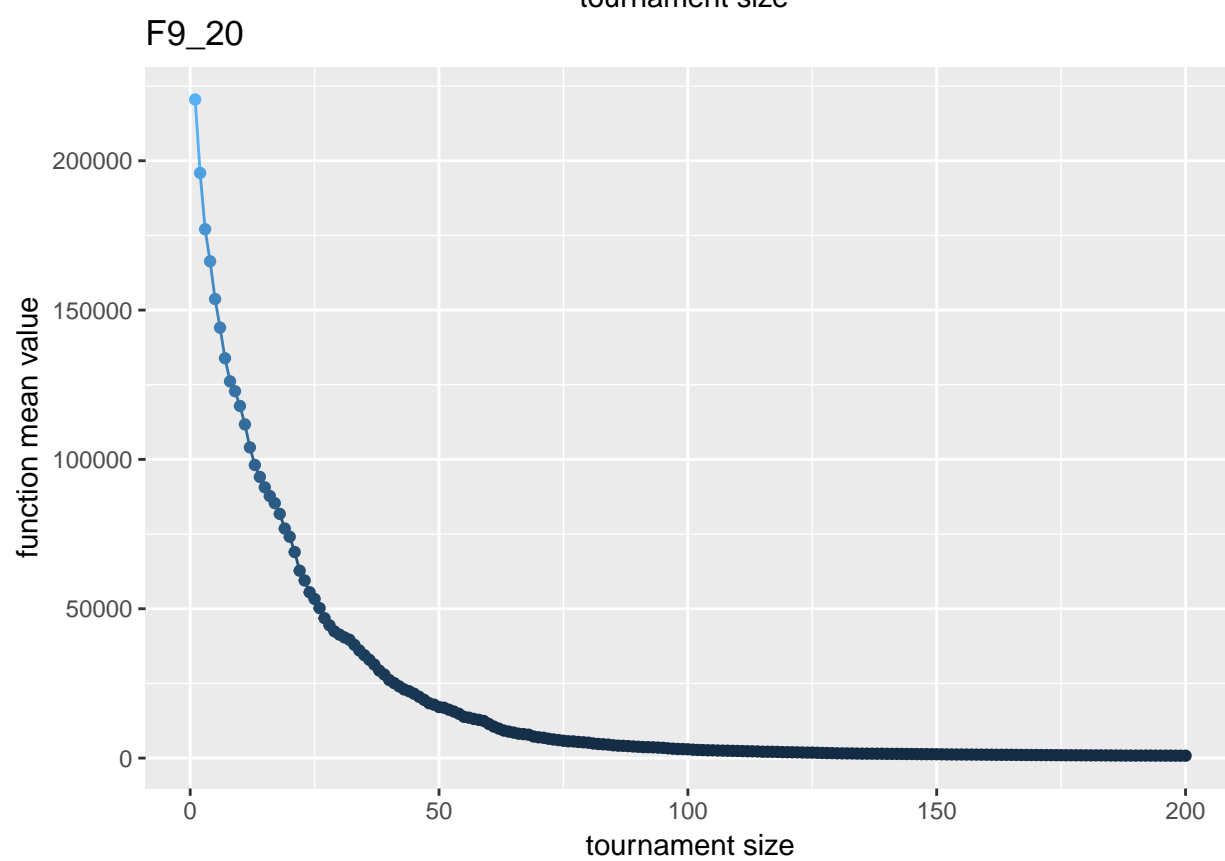
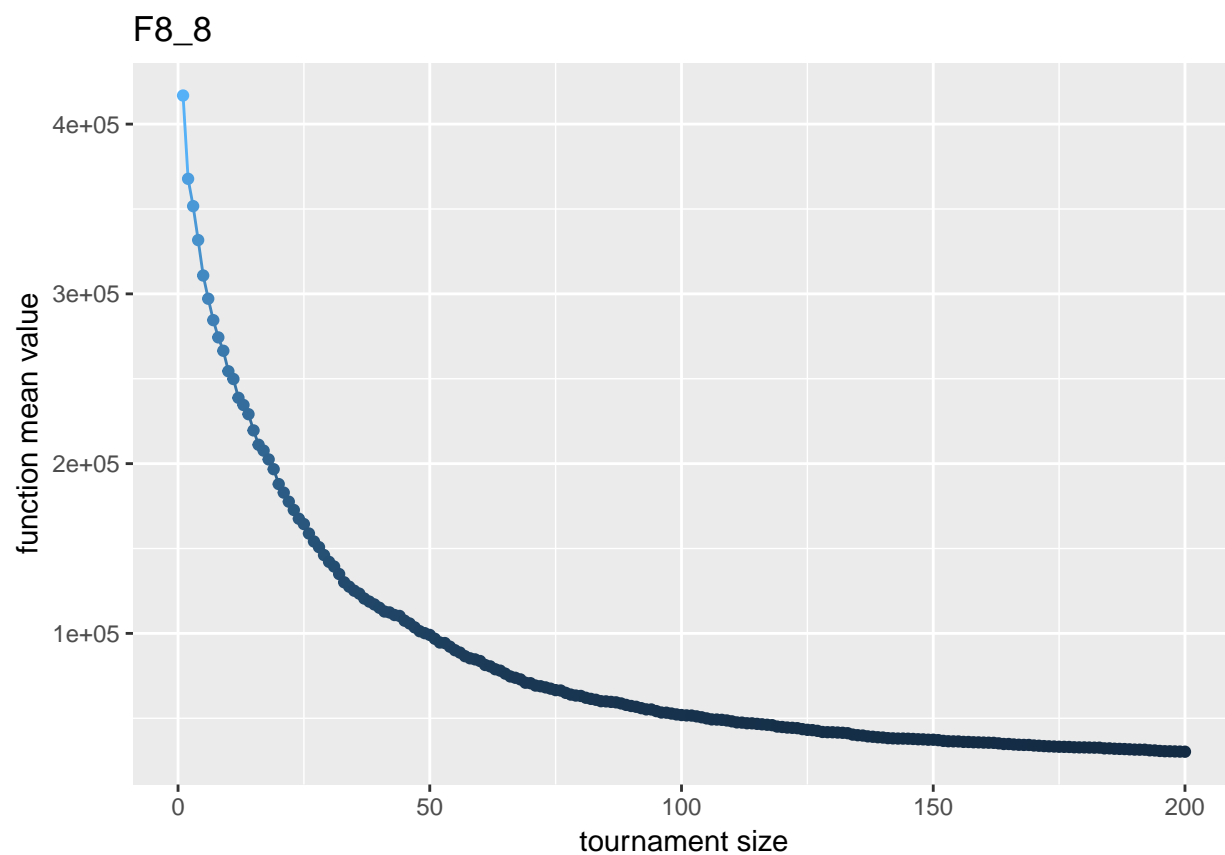
Based on the best values for  $K$ , from plots of the last section, we made the convergency plots. Not all  $k$  values are represented because the plot are basically the same. Also the std was omitted, because in some plots the difference between the std and the mean is very big. In those cases, it was difficult to see any convergency (the line was almost a straight line).



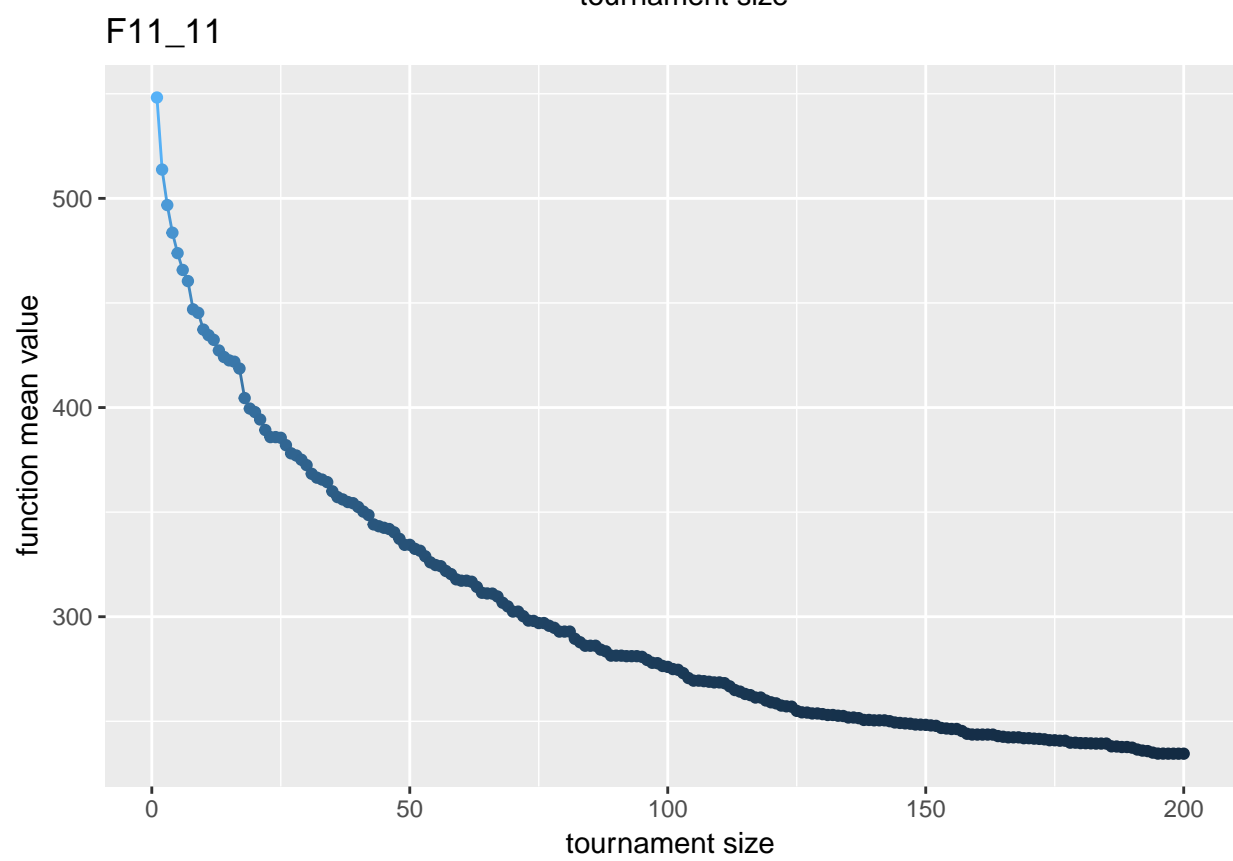
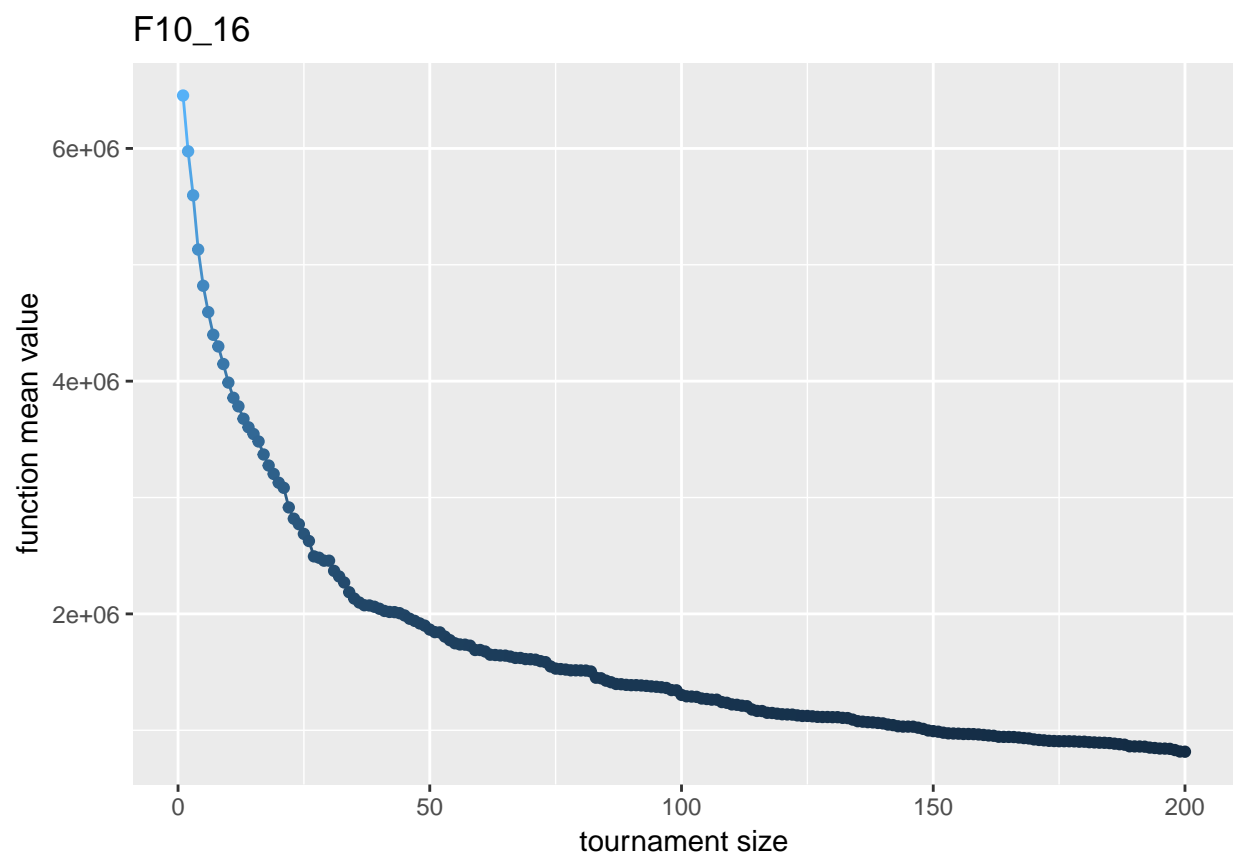


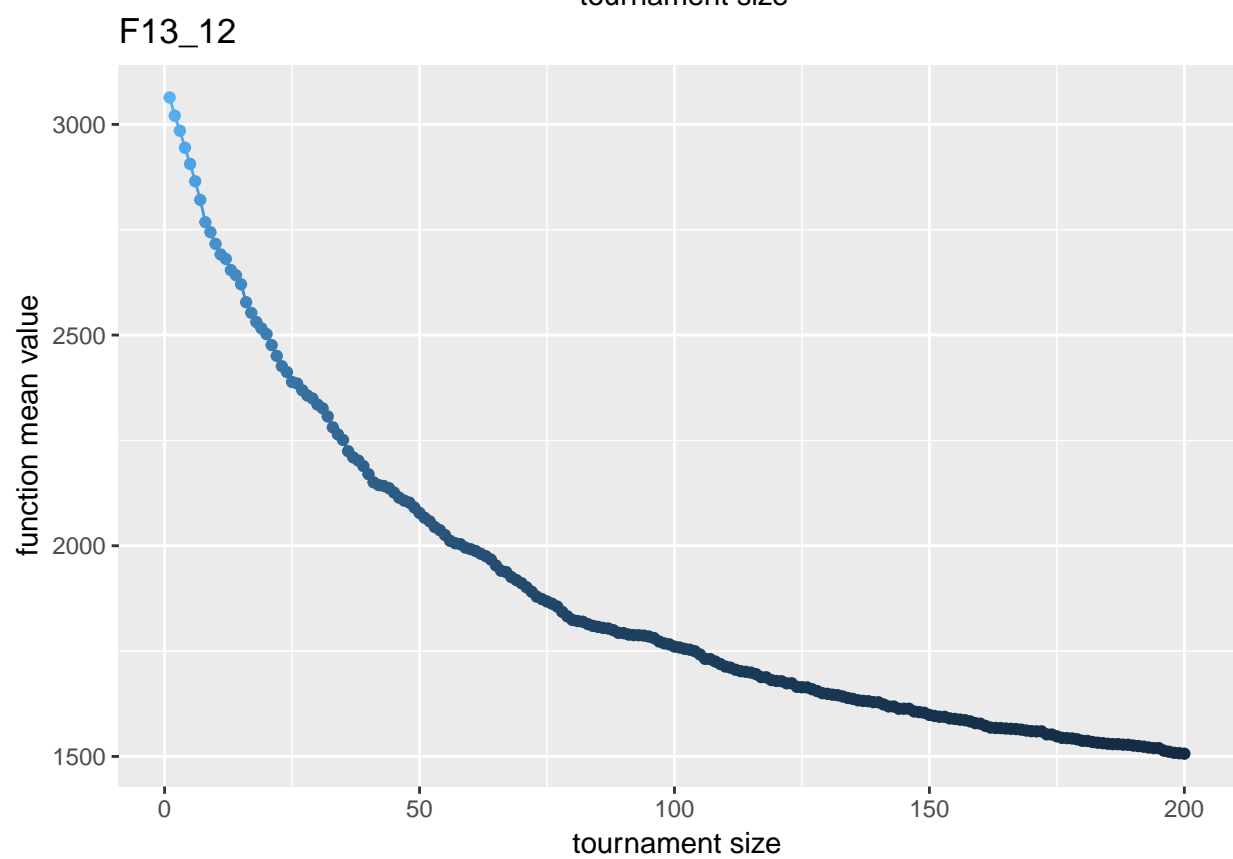
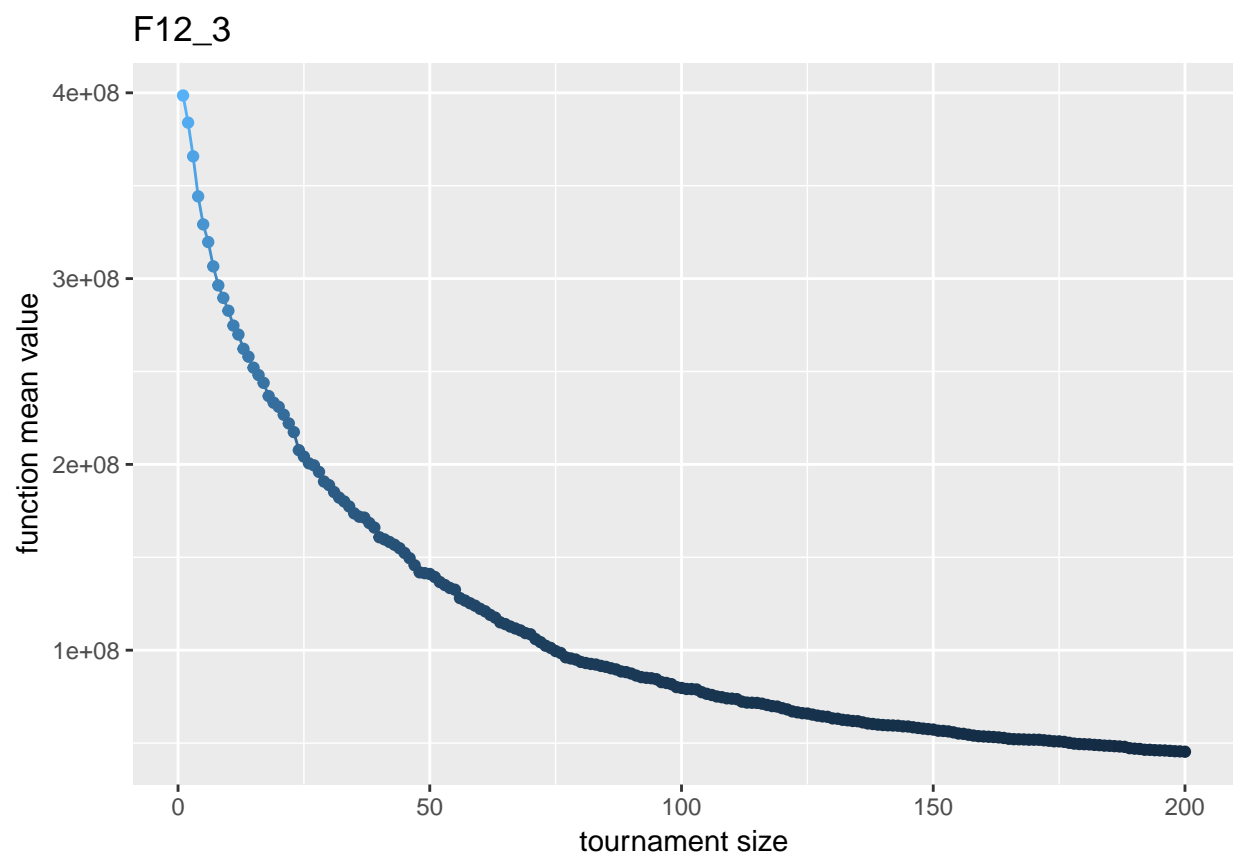




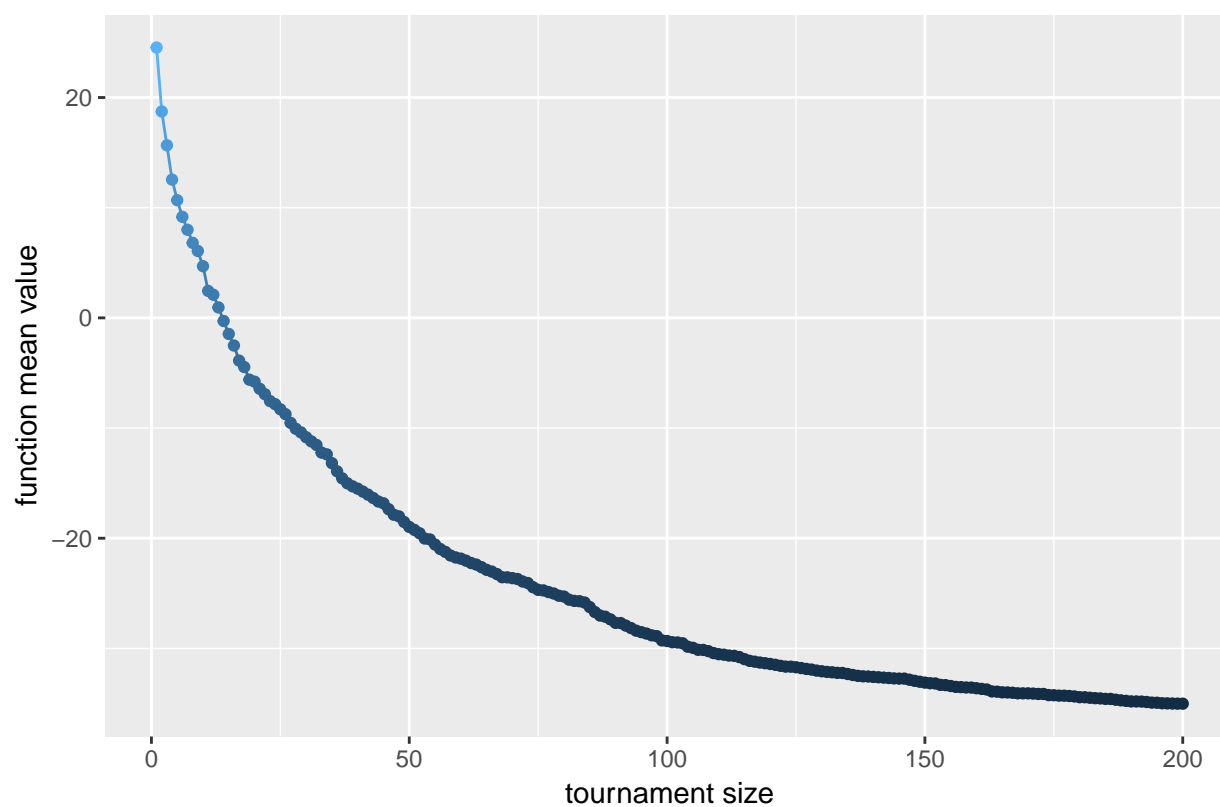




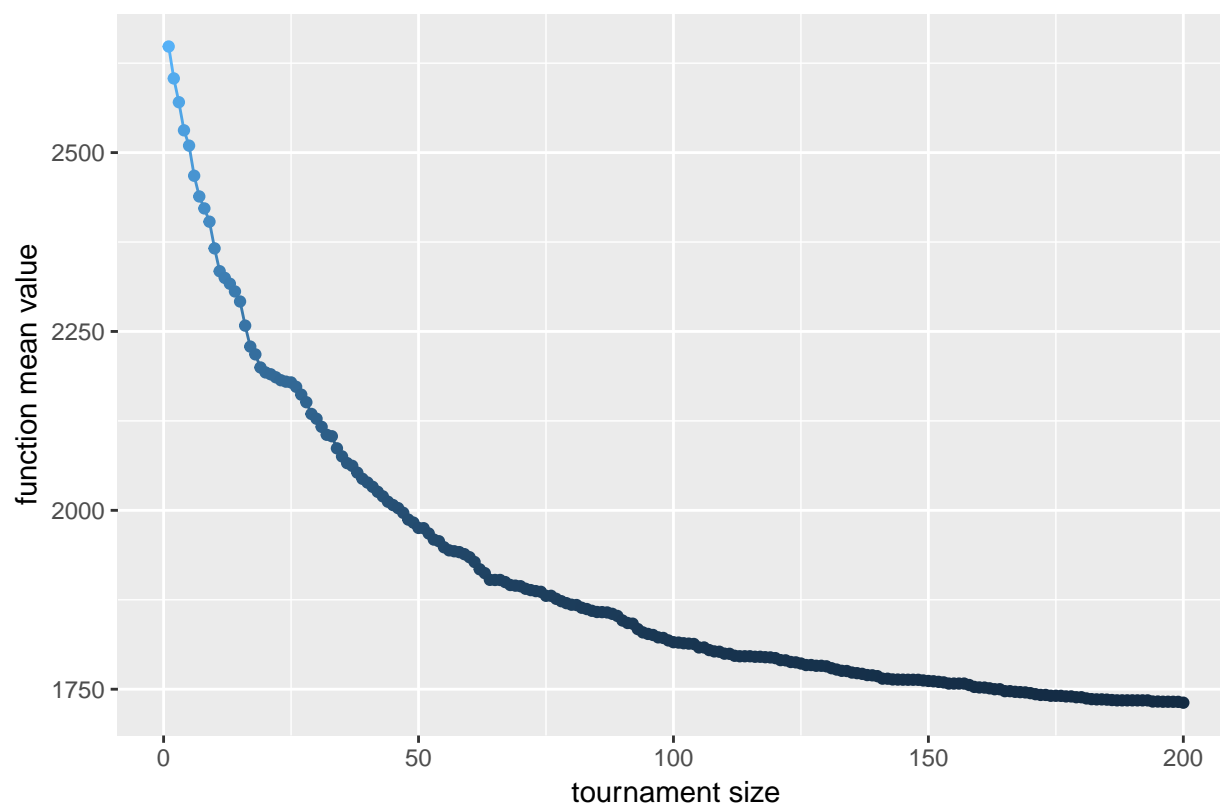


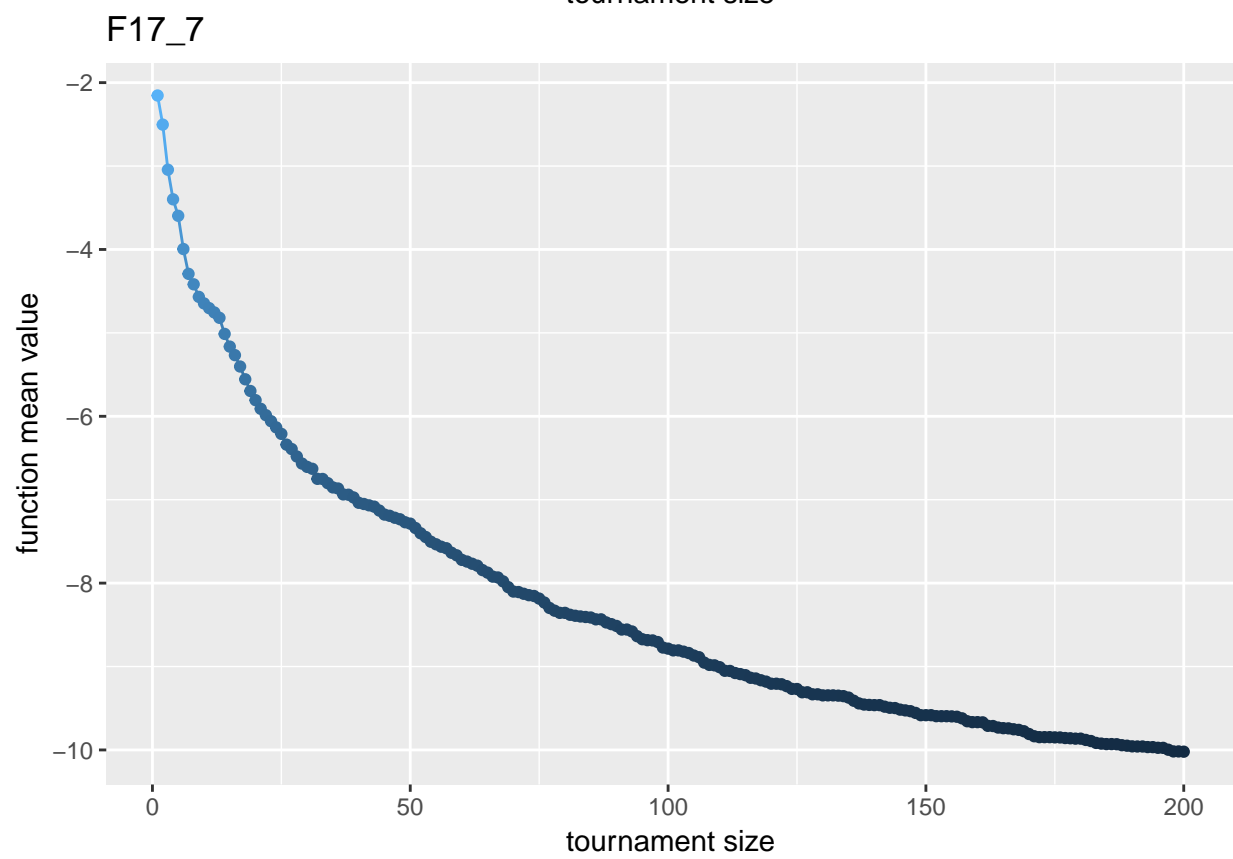
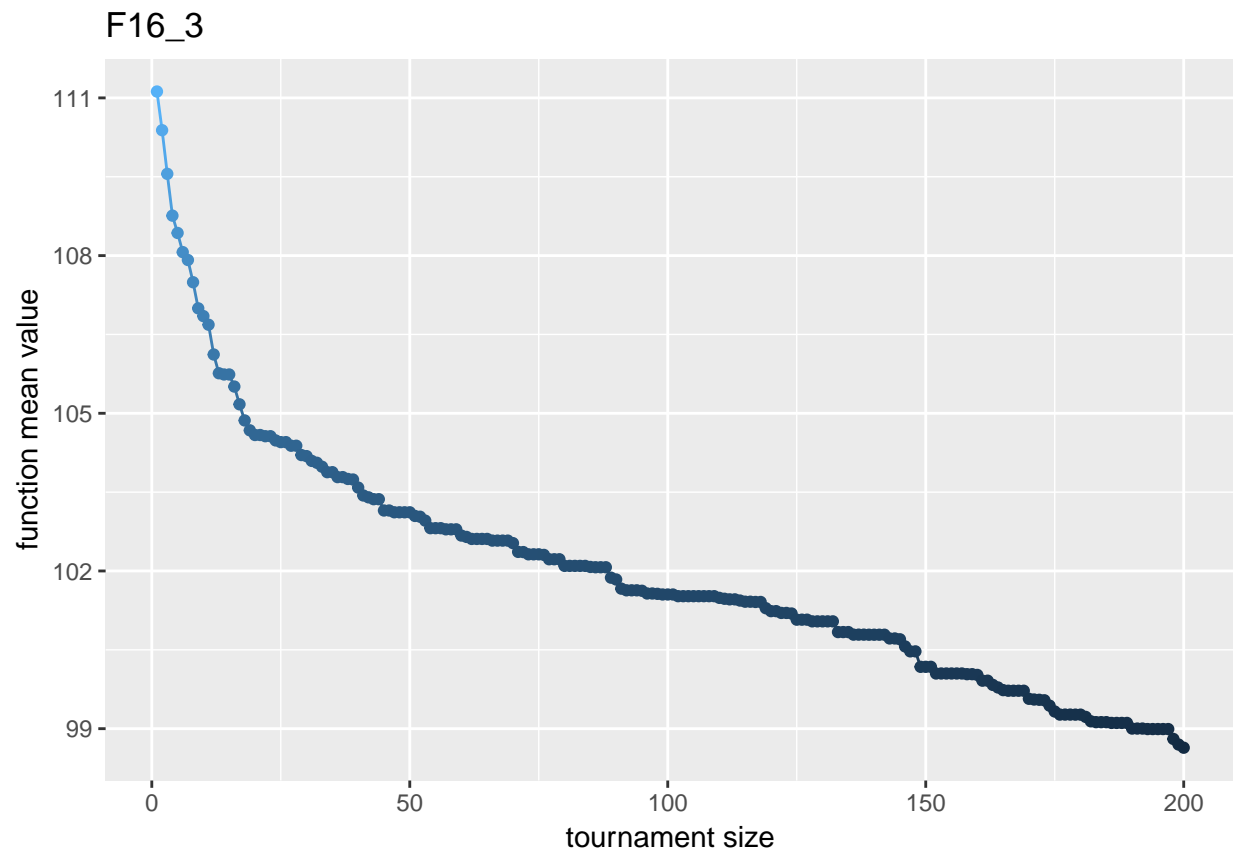


F14\_12

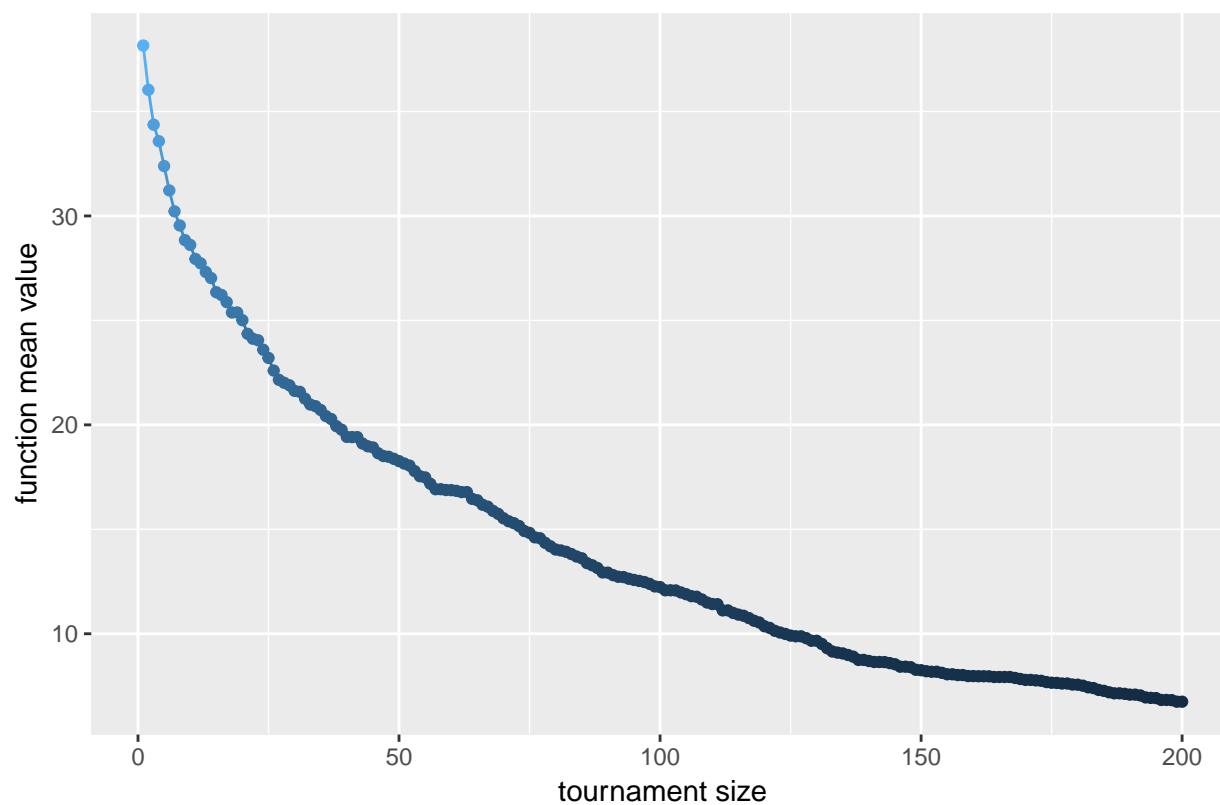


F15\_16





F18\_23



F19\_7

