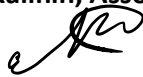**Scientific adviser's review of thesis ``Equilibrium existence in the case of non-divisible objects '' of Toropova Ekaterina.**

The problem of competitive equilibrium in the case of indivisible objects is an old open problem, apparently a hard one. The main contribution of the thesis consists of closing some previously open cases.

Namely, we consider two persons with additive valuations over a set of objects. Both persons have budgets. The goal is to find prices to all objects such that each person buys the most preferable subset of objects within his budget, and there is no conflict, and all objects are sold. Ekaterina proved the existence of such prices in several previously open cases where there are several identical objects. It seems that all the remaining open cases are small perturbations of those one though it is only a conjecture.

Suggested grade: 5 (Excellent).

Nikita Kalinin, Associate professor, Saint Petersburg State University.

10 june 2011