Seisan no Keizaigaku —Keiei Gorika no Seisan Ron
(The Economics of Production: On the Production
resulting in the Rationalization of Management), by
Tairoku Kose. Published in Japanese. Shunju-sha,
Tokyo, Japan, 1964; iv + 228 pp., ¥580.

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No one can disagree to the view that the linear programming
(abbreviated hereafter as LP) is one of the most remarkable topics
which belong to post-war development in economics. By itself, the
theory of LP is nothing else than a branch of mathematics, and
its mathematical structures have been exhaustively studied and
clarified. But this mathematical tool is applicable for detailed
analysis of some economic problems, namely, production in a firm.
Thus, *as economics,* the economic implications of LP are being
investigated and the several experiences in the applications are
being theorized.

The present book will be useful for the student who wants to
understand LP *as economics.* The author has minimized the space
devoted to the pure mathematical expositions of LP and maximized
the space devoted to the exposition of the practical implications
of LP subject to the constraint that the expository article on LP
becomes necessarily mathematical as a consequence of its very
nature. (Readers must find that this book is an unique optimal
solution of the above problem!) The reviewer thinks that the author
has succeeded in presenting LP in an easily-understandable form.

In Chapter 1, basic concepts of activity analysis are introduced
with an example of Petroleum Refining Industry. This chapter
also contains a short introduction to the input-output analysis.
In Chapter 2, inequality relation and its graphical representation are
introduced to describe the production posibilities. More technically,

feasible set, its *convexity* and *efficient frontier* are the main themes of this chapter. Chapter 3 is devoted to the usual exposition of LP; namely, *the simplex method.* In Chapter 4, firstly, dual problem is formally derived from primal problem and *duality theorems* are stated. Secondly, the managerial implications of duality theorems are explained. The author also refers briefly to a so-called *gradient method* to which the author was a pioneering contributor. The reviewer hopes that the author will have another opportunity to publish the full exposition of the gradient method. Thirdly, parametric programming and decomposition principle are introduced. Lastly, relation of *efficiency* and *price* is explained. Chapter 5 discusses mainly integer programming which is an important extension of LP. Chapter 6 is devoted to introduce multi-stage programming or dynamic programming. Chapter 7 discusses a so-called risk programming. Last two chapters are only brief guides to the topics discussed there.

As the subtitle of this book suggests, this book is also useful for the reader who wants to apply LP to a management problem. This is another characteristics of the present book. In this sense, the reviewer recommends, without hesitation, both the student in economics and the practical programming solver to read this book.