these things should fit into a general framework are challenges that should be given serious consideration by any student of transcendental number theory.

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Combinatorial optimization: networks and matroids, by Eugene L. Lawler, Holt, Rinehart and Winston, New York, 1976, x + 374 pp.

This is a well-written introduction to an attractive area of modern mathematics. It is highly recommended.

Some problems in this area are:

1. Find the shortest path through a finite network.
2. Find the kth shortest path through a finite network.
3. Find the path of shortest length through all points of a finite network ("the travelling salesman" problem or technically a Hamiltonian circuit.)
4. How does one process m items on n machines?
5. How does one calculate 2^n with a minimum number of multiplications?
6. How does one compute a polynomial in many variables with a minimum number of multiplications?
7. How does one find m defective coins among n coins?

The fourth, fifth, sixth, and seventh problems are not treated in this book. The fourth problem is very important in many industrial applications and in operating a computer installation. Nabeshima has written a book in Japanese on this problem, which he is translating into English. Many other mathematicians have worked on this problem. Branch and bound techniques have been used by many. The fifth problem has no applications that the reviewer knows of. It is like many problems in number theory, simply stated and intractable. The sixth problem has many applications in a number of algorithms. In this case of polynomials of one variable, the problem is solved. Ostrowski treated the case of polynomials up to degree four, and the general case was treated by Pan. They showed that the well-known technique of Horner was best.

In problem 7 the case $m = 1$ is a well-known puzzle which may be solved using many methods. The case $m = 2$ was treated in [1]. The case of general m is part of a mathematical theory of experimentation which does not yet exist.

Since these are finite problems and we have a digital computer at our