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optimization
problems are
everywhere,*

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*databases; to
advertising
issues in
viral
marketing. Yet
most such
problems are
NP-hard;
unless $P = NP$,
there are no
efficient
algorithms to*

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solutions.*

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shows how to
design
approximation
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efficient
algorithms
that find
provably near-
optimal*

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algorithmic
techniques for
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algorithms,
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programming,
linear and
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programming,
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in the first
section is
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algorithms
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combinatorics
and especially
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best way to teach
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topics is to
present them in a
context that is
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applications to
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in centralized
supply chains,
including
integrated
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scheduling and
product pricing,
and coordinated
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Coordination and competition issues in decentralized supply chains, including conflict and cooperation within scheduling decisions made by different parties in supply chains, and both

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procedures for
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methods for
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programming nor
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beyond a
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level. Thus, the
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a gentle and
entertaining
introduction to
main ideas in
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problem solving.
The second and
main part of the
book contains
150 puzzles, from
centuries-old
classics to
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sixty puzzle of
average difficulty
and forty harder
puzzles require
just high school
mathematics plus
a few topics such
as binary
numbers and
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which are reviewed in the tutorial. All the puzzles are provided with hints, detailed solutions, and brief comments. The comments deal with the puzzle origins and design or

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techniques used
in the solution.

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be of interest to
puzzle lovers,
students and
teachers of
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courses, and
persons
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chapter on recurrence (now called “Divide-and-Conquer”), and an appendix on matrices. It features improved treatment of dynamic programming and greedy algorithms and a new notion of edge-based flow in the material on flow networks. Many

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with the statement
of the problem
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**introductory
overview of fluid
thermal systems (a
pump and pumping
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conditioner, a
baseboard heater, a
water slide, and a
vacuum cleaner are
among the
examples given),
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properties of fluids**

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and the equations of
fluid mechanics.

The text then offers
an in-depth
discussion of piping
systems, including
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pumps (including
net positive suction
head
considerations) and
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provides the reader with the ability to design an entire system for moving fluids that is efficient and cost-effective. Next, the book provides a review of basic heat transfer principles, and the analysis of heat exchangers, including double pipe, shell and tube,

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plate and frame
cross flow heat
exchangers. Design
considerations for
these exchangers
are also discussed.
The text concludes
with a chapter of
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by teams of
students.

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Computer science
and economics
have engaged in a
lively interaction
over the past
fifteen years,
resulting in the
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are increasingly
important in
economics. This
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the author's
Stanford
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*aims to give
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other newcomers
a quick and
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many of the most
important
concepts in the
field. The book
also includes case
studies on online*

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*advertising,
wireless spectrum
auctions, kidney
exchange, and
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management.*

*The problem of
exchanging data
between different
databases with
different schemas
is an area of*

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*immense
importance.*

*Consequently
data exchange
has been one of
the most active
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questions related
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*largely revolve
around three key
problems: how to
build target
solutions; how to
answer queries
over target
solutions; and
how to manipulate
schema mappings
themselves? The
last question is*

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*also known under
the name
'metadata
management',
since mappings
represent
metadata, rather
than data in the
database. In this
book the authors
summarize the
key developments*

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instructions for solving
a problem, and is
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