

TUPC/PUPC 線上題庫

TUPC/PUPC 歷屆試題

2016

https://csie.asia.edu.tw/uploads/archive_file_multiple/file/621db5f6063ca2e3cd15de1a/ncTu_2016.pdf

2017

https://csie.asia.edu.tw/uploads/archive_file_multiple/file/621db5f6063ca2e3cd15de19/ncTu_2017.pdf

2018

https://csie.asia.edu.tw/uploads/archive_file_multiple/file/621db5f6063ca2e3cd15de18/ncTu_2018.pdf

2019

https://csie.asia.edu.tw/uploads/archive_file_multiple/file/621db5f6063ca2e3cd15de1d/ncTu_2019.pdf

2020

https://csie.asia.edu.tw/uploads/archive_file_multiple/file/621db5f6063ca2e3cd15de1c/ncTu_2020.pdf

2021

https://csie.asia.edu.tw/uploads/archive_file_multiple/file/621db5f6063ca2e3cd15de1b/ncPu_2021.pdf

2022

https://csie.asia.edu.tw/uploads/archive_file_multiple/file/62c4ed99063ca258a4fb4d91/PUPC2022%E7%AB%B6%E8%B3%BD%E9%A1%8C%E7%9B%AE.pdf

2023 (詳解 by 謝育平老師)

<https://www.youtube.com/watch?v=yR2qCzy17kA>

ICPC/NCPC 線上題庫

請至 ITSA 教育部智慧創新跨域人才培育聯盟計畫聯合登入平臺
(<https://portal.itsa.org.tw/index>) 註冊帳號並登入，成功登入後會看到以下入口畫面



ITSA 教育部智慧創新跨域人才培育聯盟計畫
聯合登入平臺

Lin Chuang-Chieh ▼



選擇程式自學平台 → 線上題庫，便可看到各樣題庫



針對 ICPC 題庫，可點選 "各競賽試題" 進入，即可看見 "ICPC 臺灣區 題目專區"，勾選 "同意加入題庫成員"

ICPC 臺灣區 題目專區

[返回上一頁](#)

2023年
2022年
2021年
2020年
2019年
2017年
2016年
2015年
2014年
2013年
2009年

- 使用者
 - 題庫參與者
- 活動
 - 程式練習
 - 討論區
- 系統管理
 - 成績
 - 簡介

主題大綱

- 公佈欄
- 1 [Problem PA] Counterfeit Money
- 2 [Problem PB] Recurring Decimal to Fractions
- 3 [Problem PC] Where the Lantern Lights are Dimming
- 4 [Problem PD] Quarantine Policy
- 5 [Problem PE] Slabstones Rearrangement
- 6 [Problem PF] Baker's Dilemma
- 7 [Problem PG] A Packing Problem
- 8 [Problem PH] Bank Deposit Challenge
- 9 [Problem PI] The Pentagon Conjecture
- 10 [Problem PJ] Lead Time Estimation

其他題庫與資源

CSES Problem Set (<https://cses.fi/problemset/>; 感謝張碩齊同學提供)

Problem Set (<https://cses.fi/problemset/>)

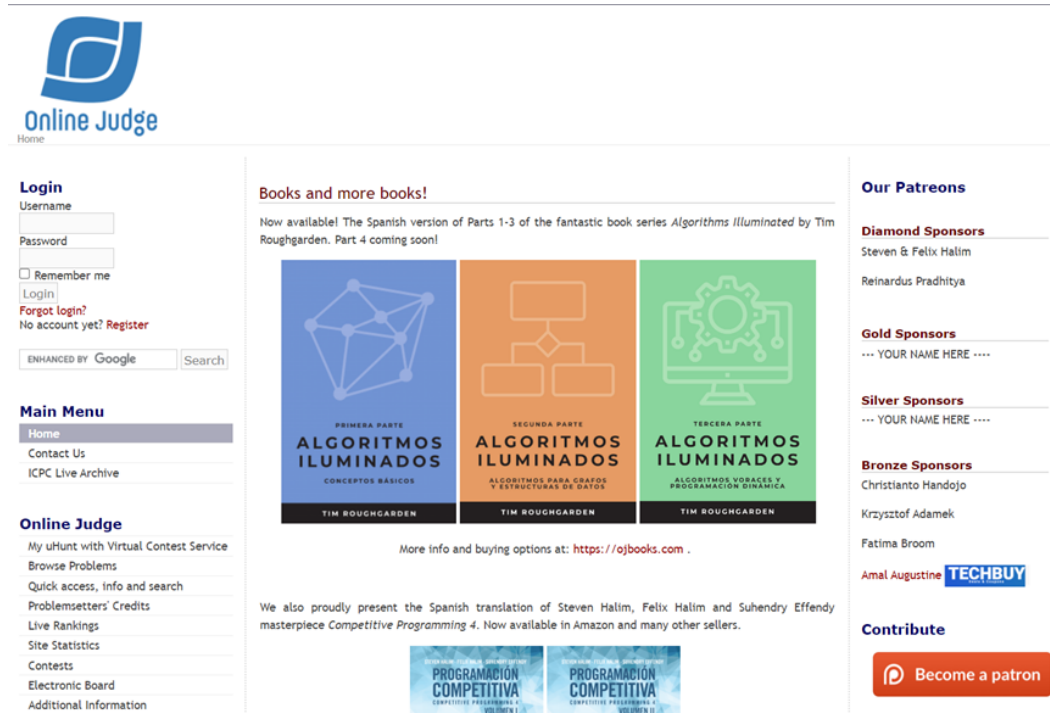
AP325—從 APCS 實作題檢測三級到五級 (https://jmj.cmgsh.tp.edu.tw/files/AP325_v1.3.pdf;
by 吳邦一教授)

競賽導論及常用函式 (<https://hackmd.io/@MingdaoCP/ryG67cnQK?print-pdf#/>)

UVa Online Judge (請見次頁說明; 感謝陳洧鑫同學協助)

UVa Online Judge 使用說明

1. UVa Online Judge 網址: <https://onlinejudge.org/>
2. 介面如下:已有帳號者則直接登入，未有帳號則點選“Register”進行註冊。




3. 接下來填寫相關資訊，Result email 勾選:如有排名更動會 email 通知，若不勾選則不會有排名通知。Virtual Judge 可勾選或不勾選。

Registration

Name:	<input type="text"/>	!
Email:	<input type="text"/>	!
Username:	<input type="text"/>	!
Password:	<input type="password"/>	!
Verify Password:	<input type="password"/>	!
Former UVa ID:	<input type="text"/>	!
Results email:	<input type="checkbox"/>	!
Virtual Judge:	<input type="checkbox"/>	!

4. 接著點選 Browse problem 即可瀏覽題目，並選擇題目閱覽及點選 submit 作答。



Online Judge
Home

Login

Username

Password

☐ Remember me

Login

Forgot login?
No account yet? Register

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Main Menu




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Online Judge

- My uHunt with Virtual Contest Service
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- Quick access, info and search
- Problemsetters' Credits
- Live Rankings
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- Contests
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- Additional Information



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Browse Problems

Root :: Problem Set Volumes (100...1999) :: Volume 1 (100-199)

Title	Total Submissions / Solving %	Total Users / Solving %
100 - The 3n + 1 problem	918905 / 100%	141788 / 100%
101 - The Blocks Problem	123199 / 100%	24852 / 100%
102 - Ecological Bin Packing	109972 / 100%	32144 / 100%
103 - Stacking Boxes	45913 / 100%	12263 / 100%
104 - Arbitrage	32583 / 100%	7113 / 100%
105 - The Skyline Problem	64359 / 100%	15500 / 100%
106 - Fermat vs. Pythagoras	29815 / 100%	7046 / 100%
107 - The Cat in the Hat	53128 / 100%	9179 / 100%
108 - Maximum Sum	73075 / 100%	23745 / 100%
109 - SCUD Busters	14119 / 100%	3738 / 100%
110 - Meta-Loopless Sorts	13014 / 100%	3583 / 100%
111 - History Grading	35690 / 100%	13526 / 100%
112 - Tree Summing	39420 / 100%	8113 / 100%
113 - Power of Cryptography	77538 / 100%	24687 / 100%
114 - Simulation Wizardry	8960 / 100%	2603 / 100%
115 - Climbing Trees	7648 / 100%	2299 / 100%
116 - Unidirectional TSP	69848 / 100%	12641 / 100%
117 - The Postal Worker Rings Once	10026 / 100%	3960 / 100%
118 - Mutant Flatworld Explorers	28112 / 100%	9999 / 100%
119 - Greedy Gift Givers	44677 / 100%	13137 / 100%

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100 - The 3n + 1 problem

Time limit: 3.000 seconds

Object not found!

要求された URL は本サーバでは見つかりませんでした。参照ページのリンクが間違っているか、古くなっている可能性があります。ページの著者にこのエラーをお知らせ下さい。

サーバーの障害と思われる場合は、ウェブ管理者までご連絡ください。

Error 404

onlinejudge.org
Thu Jan 18 03:51:58 2024
Apache/2.2.31 (Unix) DAV/2

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My Submissions

#	Problem	Verdict	Language	Run Time	Submission Date
29136911	100 The 3n + 1 problem	Wrong answer	C++11	0.470	2024-01-18 02:56:23
29136908	100 The 3n + 1 problem	Compilation error	ANSI C	0.000	2024-01-18 02:53:49
22487326	11541 Decoding	Time limit exceeded	C++	1.000	2018-12-23 15:58:18
22487318	11541 Decoding	Compilation error	C++	0.000	2018-12-23 15:57:01
22487316	11541 Decoding	Compilation error	C++	0.000	2018-12-23 15:56:25
22487305	11541 Decoding	Accepted	C++	0.000	2018-12-23 15:53:47
22487299	11541 Decoding	Compilation error	C++	0.000	2018-12-23 15:51:43
22487296	11541 Decoding	Compilation error	C++	0.000	2018-12-23 15:50:37
22487291	11541 Decoding	Compilation error	C++	0.000	2018-12-23 15:49:18
22487289	11541 Decoding	Compilation error	C++	0.000	2018-12-23 15:47:54
22487217	488 Triangle Wave	Accepted	C++	0.310	2018-12-23 15:31:40
22487122	100 The 3n + 1 problem	Accepted	C++	0.390	2018-12-23 15:11:17
22487046	488 Triangle Wave	Presentation error	C++	0.320	2018-12-23 14:50:00
22486694	10071 Back to High School Physics	Accepted	C++	0.000	2018-12-23 13:31:09

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Uva

5. 部分題目有中文翻譯可參考: <http://web.kshs.kh.edu.tw/academy/luckycat/index.htm>

6. 以下提供部分題目類型分類及難度:

New Comer

- ★ 100 The 3n+1 problem
- ★ 10189 Minesweeper
- ★ 10137 The Trip
- ★ 706 LCD Display
- ★ 10267 Graphical Editor
- ★★ 10033 Interpreter
- ★ 10196 Check The Check
- ★ 10142 Australian Voting

Data Structure

- ★ 10038 Jolly Jumpers
- ★★ 10315 Poker Hands
- ★★ 10050 Hartals
- ★★ 843 Crypt Kicker
- ★ 10205 Stack 'em Up
- ★★ 10044 Erdos Numbers
- ★ 10258 Contest Scoreboard
- ★★★★ 10149 Yahtzee

String

- ★ 10082 WERTYU
- ★★ 10010 Where's Waldorf?
- ★ 10252 Common Permutation
- ★★ 850 Crypt Kicker II
- ★ 10188 Automated Judge Script
- ★★ 10132 File Fragmentation
- ★★★★ 10150 Doublets
- ★★ 848 Fmt

Sorting

- ★ 10041 Vito's Family
- ★★ 120 Stacks of Flapjacks
- ★★★★ 10037 Bridge
- ★ 10191 Longest Nap
- ★★ 10026 Shoemaker's Problem
- ★★ 10138 CDVII
- ★★ 10152 ShellSort
- ★ 10194 Football (aka Soccer)

Arithmetic and Algebra

- ★ 10035 Primary Arithmetic
- ★ 10018 Reverse and Add
- ★ 701 The Archeologists' Dilemma
- ★★ 10127 Ones
- ★★★★ 847 A Multiplication Game
- ★ 10105 Polynomial Coefficients
- ★ 10077 The Stern-Brocot Number System
- ★★★★ 10202 Pairsumonious Numbers

Combinations

- ★ 10183 How Many Fibs?
- ★★ 10213 How Many Pieces of Land ?
- ★★ 10198 Counting
- ★★ 10157 Expressions
- ★★ 10247 Complete Tree Labeling
- ★★ 10254 The Priest Mathematician
- ★★ 10049 Self-describing Sequence
- ★★ 846 Steps

Number Theory

- ★ 10110 Light, More Light
- ★★ 10006 Carmichael Numbers
- ★ 10104 Euclid Problem
- ★★ 10139 Factovisors
- ★★ 10168 Summation of Four Primes
- ★ 10042 Smith Numbers
- ★ 10090 Marbles
- ★★ 10089 Repackaging

其他 (僅列出分類、題號與題目)

Flood Fill

352 - The Seasonal War
469 - Wetlands of Florida
572 - Oil Deposits
657 - The die is cast
705 - Slash Mazes
776 - Monkeys in a Regular Forest
782 - Contour Painting
784 - Maze Exploration
785 - Grid Colouring
830 - Shark
852 - Deciding victory in Go
10279 - Mine Sweeper
10336 - Rank the Languages
10592 - Freedom Fighter
10946 - You want what filled?

Max Flow / Max Bipartite Matching:

259 - Software Allocation
563 - Crimewave
663 - Sorting Slides
670 - The Dog Task
753 - a plug for unix
820 - Internet Bandwidth
10080 - Gopher II
10092 - The Problem with the Problem Setter
10122 - Mysterious Mountain
10249 - the grand dinner (Max Flow too slow for TLE)
10330 - Power Transmission

10380 - Shogi Tournament
10511 - Councilling
10746 - Crime Wave - The Sequel
10779 - Collectors Problem
10804 - Gopher Strategy

Games:

847 - Multiplication Game
10368 - Euclids Game
10404 - Bachet's Game
10578 - The Game of 31

Dynamic Programming:

108 - Maximum Sum
111 - History Grading
116 - Unidirectional TSP
147 - Dollars
164 - String Computer
231 - Testing the CATCHER
348 - Optimal Array Multiplication Sequence
357 - Let Me Count The Ways
442 - Matrix Chain Multiplication
481 - What Goes Up
497 - Strategic Defense Initiative
507 - Jill Rides Again
526 - String Distance and Edit Process
531 - Compromise
562 - Dividing Coins
674 - Coin Change
711 - Dividing Up
836 - Largest Submatrix
10003 - Cutting Sticks
10032 - Tug Of War
10051 - Tower of Cubes
10066 - The Twin Towers
10069 - Unidirectional TSP
10081 - Tight Words
10100 - Longest Match
10130 - SuperSale
10131 - Is Bigger Smarter?
10154 - Weights and Measures
10192 - Vacation
10201 - Advantures in Moving Part IV
10259 - Hippiity Hopscotch

10261 - Ferry Loading
10280 - Old Wine into New Bottles
10304 - Optimal Binary Search Tree
10379 - Pit Stop Strategy
10400 - Game Show Math
10405 - Longest Common Subsequence
10465 - Homer Simpson
10482 - The Candyman Can
10529 - Dumb Bones
10549 - Russian Dolls
10558 - A Brief Gerrymander
10559 - Blocks
10593 - Kites
10599 - Robots (II)
10604 - Chemical Reaction
10617 - Again Palindrome
10635 - Prince and Princess
10645 - Menu
10664 - Luggage
10690 - Expression Again
10721 - Bar Codes
10723 - Cyborg Genes
10739 - String to Palindrome
10755 - Garbage Heap
10759 - Dice Throwing
10817 - Headmaster's Headache
10819 - Trouble of 13-Dots
10827 - Maximum Sum on a Torus
10860 - Many a Little Makes a Mickel
10874 - Segments
10898 - Combo Deal
10912 - Simple Minded Hashing
10913 - Walking on a Grid

Graphs:

117 - The Postal Worker Rings Once
125 - Numbering Paths
280 - vertex
709 - Formatting Text (the shortest path)
793 - Network Connections
10239 - The Book-shelver's Problem (the shortest path)
10265 - Toroidal Chess Queens' Problem (tree rounds ???)
10266 - Surveying (connected components)
10054 - euler problem
10178 - count the faces
10608 - Friends
10731 - Test

Connectivity:

459 - Graph Connectivity
10147 - Highways
10397 - Connect the Campus

Big Integer:

324 - Factorial Frequencies
424 - Integer Inquiry
495 - Fibonacci Freeze
623 - 500!
713 - Adding Reversed Numbers
10013 - Super long sums
10018 - Reverse and Add
10035 - Primary Arithmetic
10106 - Product
10220 - I Love Big Numbers !
10515 - Powers Et Al.

Counting:

357 - Let Me Count The Ways
369 - Combinations
10219 - Find the ways !
10338 - Mischievous Children

Josephus:

151 - Power Crisis
440 - Eeny Meeny Moo

Math:

106 - Fermat vs. Pythagoras
113 - Power of Cryptography
579 - ClockHands
834 - Continued Fractions
847 - A Multiplication Game

10071 - Back to High School Physics
10079 - Pizza Cutting
10161 - Ant on a Chessboard
10302 - Summation of Polynomials
10408 - Farey sequences

Matrix:

108 - Maximum Sum
348 - Optimal Array Multiplication Sequence
541 - Error Correction
836 - Largest Submatrix
10189 - Minesweeper

Number Conversion:

344 - Identifying Concurrent Events
446 - Kibbles `n" Bits `n" Bits `n" Bits
575 - Skew Binary
10469 - To Carry or not to Carry

Number Theory:

136 - Ugly Numbers
138 - Street Numbers
160 - Factors and Factorials
256 - Quirky Squares
294 - Divisors
350 - Pseudo-Random Numbers
382 - Perfection
406 - Prime Cuts
408 - Uniform Generator
543 - Goldbach's Conjecture
686 - Goldbach's Conjecture (II)
10200 - Prime Time

Simulation:

10346 - Peter's Smoke
10409 - Die Game

Sorting & Searching:

299 - Train Swapping
331 - Mapping the Swaps
499 - What's The Frequency, Kenneth?
10008 - What's Cryptanalysis?
10107 - What is the Median?
10295 - Hay Points
10327 - Flip Sort

String:

272 - TEX Quotes
401 - Palindromes
444 - Encoder and Decoder
458 - The Decoder
483 - Word Scramble
490 - Rotating Sentences
492 - Pig-Latin
494 - Kindergarten Counting Game
576 - Haiku Review
739 - Lost in Space
10082 - WERTYU
10222 - Decode the Mad man
10260 - Soundex
10293 - Word Length and Frequency
10340 - Peter's Smoke
10361 - Peter's Smoke
10424 - Love Calculator
10508 - Word Morphing

Tree:

536 - Tree Recovery
10223 - How many nodes ?
10410 - Tree Reconstruction

Variable Range:

10055 - Hashmat the Brave Warrior

Greedy:

10020 - Minimal Coverage
10382 - Watering Grass
10440 - Ferry Loading (II)
10563 - Least Squares
10665 - Diatribe

Graph Theory:

- Topological Sorting:

00200 Rare Order	Find the correct ordering of an alphabet
10305 Ordering Tasks	Provide some ordering of tasks

- Trees

00112 Tree Summing	Navigate through a LISP encoded binary tree
00115 Climbing Trees	Figure out the relationships between people
00122 Trees on the level	Produce level-order traversals of binary trees
00615 Is It A Tree?	Determine whether or not the graph is a tree
10308 Roads in the North	Find the longest distance (diameter) of a tree.

- Eulerian Graphs

00117 The Postal Worker...	Minimize a cost tour for a postman (Simplified Chinese Postman problem)
----------------------------	--

- Cycles

00125 Numbering Paths	Count number of paths in a directed graph
00626 Ecosystem	Find/Print all cycles of size 3

- Polygon Intersection

00137 Polygons	Find the XOR of two polygon areas
----------------	-----------------------------------

- Maximum Flow

00563 Crimewave	Solve the escape problem
-----------------	--------------------------

- Minimum Spanning Trees

10307 Killing Aliens in Bor..	Find least cost way to assimilate all
-------------------------------	---------------------------------------

Dynamic Programming:

- Memotization

00101 The $3n + 1$ Problem	Find the size of the longest sequence
00371 Ackermann Functions	Find the size of the longest sequence
00547 DDF	Output the longest Decimal-Digit Factor

- Longest Asc/Desc Subsequence

00103 Stacking Boxes	Find the longest desc. subsequence in n-dims.
00111 History Grading	Find marks for a chronologic ordering question

- Longest Common Subsequence

00531 Compromise	Find the LCS for two texts
------------------	----------------------------

- 1D Minimize/Maximize

00222 Budget Travel	Minimize the cost of a road trip
---------------------	----------------------------------

- 2D Minimize/Maximize

00104 Arbitrage	Find a successful arbitrage sequence
00108 Maximum Sum	Find the sub-rectangle with largest sum
00116 Unidirectional TSP	Find the minimal path through a 2D field
00585 Triangles	Find the largest triangle in a trianglular field
00590 Always on the run	Find the minimum cost for flying city to city
00526 String Distance & Transform...	Find the string distance and path
10285 Longest Run on a Snowboard	Find the longest snowboarding path in a 2D field
10306 E-coins	Find minimum number of 2D coins to get certain sum

- Change Making

00147 Dollars	Count # of ways to make change
---------------	--------------------------------

Modelling/Simulation:

- Object State Modelling

00102 The Blocks Problem	Manipulation of blocks with robot arm
--------------------------	---------------------------------------

- Planar World Modelling

00114 Simulation Wizardry	Simulate a idealized pinball machine
---------------------------	--------------------------------------

00118 Mutant Flatworld Explorers	Simulate robots moving on a plane
00407 Gears on a Board	Simulate gears on a plane
00411 Centipede Collisions	Simulate centipedes on a plane
00824 Coast Tracker	Simulate coastal robots on a plane

- Geometric Structure Modelling

00201 Squares	Count the number of squares in a grid
00209 Triangular Vertices	Model triangular coordinates

- Record Keeping / Bookkeeping

00119 Greedy Gift Givers	Keep track of everyone's net gain/loss
00123 Searching Quickly	Keep track of keywords in titles of books
00139 Telephone Tangles	Keep track of telephone bill
00145 Gondwanaland Telecom	Keep track of telephone bill
00405 Message Routing	Keep track of where routing goes
00603 Parking Lot	Keep track of cars in a parking lot
00645 File Mapping	Print out a file directory

- Josephus Rings

00130 Roman Roulette	Find the survivor
00133 The Dole Queue	Find the order of selected people
00144 Student Grants	Find the order of students getting grants
00151 Power Crisis	Find the step such that a certain region survives

- Card Games

00127 "Accordion" Patience	Simulate Accordion Patience (Solitaire)
00131 The Psychic Poker Player	Determine the best Poker hand
00451 Poker Solitaire	Evaluate some Poker hands
00462 Bridge Hand Evaluator	Evaluate some Bridge hands and suggest a move
00635 Clock Solitaire	Count winning Clock solitaire games

- Board Games

00141 The Spot Game	Figure out who wins the Spot game
00633 A Chess Knight	Figure out how many moves for a dynamic knight
00647 Chutes and Ladders	Figure out who wins a game of Chutes and Ladders
10284 Chessboard in FEN	Figure out number of unattacked squares

- Parsing:

00134 Loglan-A logical Language	Check to see if sentences are in the grammar
00171 Car Trialling	Check to see if sentence is valid instruction
00620 Cellular Structure	Identify the type of organism.
00622 Grammar Evaluation	Evaluate/Parse a $[+, *, (,)]$ math expression

- Calendar/Time Modelling

00150 Double Time	Convert between two calendars
00419 Matching Meetings	Find suitable meeting times for department

- Sports Games

00584 Bowling	Calculate a bowling game score
---------------	--------------------------------

- Data Type Modelling

00540 Team Queue	Implement a efficient TeamQueue (buddy system)
------------------	--

- Print/Font Formatting

00403 Postscript	Implement "fonts" with formatting
00416 LED Test	Determine if there is a valid LED countdown
00426 Fifth Bank of Swamp County	Output the bank record sorted in 3 columns
00433 Bank (Not Quite O.C.R)	Check LED version of bank number

- Text Manipulation

00373 Romulan Spelling	Fix some spelling mistakes
00444 Encoder and Decoder	Encode/Decode according to certain rules
00464 Sentence/Phrase Generator	Generate phrases according to grammar rules
00625 Compression	Compress some source code
00628 Passwords	Rule replacement
00641 Do the Untwist	Untwist an encrypted string

- Assembler Modelling

00448 OOPS!	Convert hexcode to assembly code
-------------	----------------------------------

Arithmetic:

- Fractions

00202 Repeating Decimals	Figure out length of repeat period of fraction
00834 Continued Fractions	Convert fraction to a continued fraction

- Pythagorean Triples

00106 Fermat vs. Pythagoras	Generating/Counting Pythagorean triples
-----------------------------	---

- Additive/Multiplicative Series

00107 The Cat in the Hat	Calculate the number of cats in the hat
00138 Street Numbers	Find special house numbers
10302 Summation of Polynomials	Find the sum of the first N cubes

- Exponentiation/Logarithms

00113 Power of Cryptography	Find integer roots of large numbers
00545 Heads	Find $2^{-n} = x.xxxE-y$ for large n

- Polynomials

00126 The Errant Physicist	Multiply polynomials of x and y
00586 Instant Complexity	Calculate the complexity of a program

- Long Division/Multiplication

00128 Software CRC	Calculate the CRC value for a string of text(divide)
00550 Multiplication by Rotation	Find shortest factor with rotamult-property
00465 Overflow	Determine whether numbers overflow an int

- Combinatorics:

00135 No Rectangles	Find a suitable block design
00146 ID Codes	Find the next permutation
00153 Permallex	Convert between indices and words sorted in lex. order
00580 Critical Mass	Count number of binary strings with 3 consecutive 1's
00527 The partition of a cake	Count the number of partitions made by cake cutting
10294 Arif in Dhaka	Count the number of necklace/bracelets of size N with T colors
10303 How Many Trees?	Count the number of binary trees (Catalan numbers)

- Primes/Factorization

00136 Ugly Numbers	Find the 1500th ugly number factors(2,3,5)
00583 Prime Factors	List the prime factorization of a number efficiently
10311 Goldbach and Euler	Determine if a number is sum of 2 primes

- Probability

00542 France '98	Figure out the probability that a team will win
10288 Coupons	Figure out probability that you will win

- Number Bases

00619 Numerical Speaking	Convert between words and numeric index
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- Partitioning

00668 Parliament Find maximum distinct partition product

Direct:

- Counting:

00102 Ecological Bin Packing	Find minimum number of bottles to move
00154 Recycling	Find station that minimizes items moving
00278 Chess	Count number of non attacking pieces
00413 Up and Down Sequences	Count the number of up and down runs
00613 Numbers that Count	Find out if numbers are self-inventorying
00637 Booklet Printing	Figure out which pages go where in a fold-over booklet
00696 How Many Knights	Find max # of knights to place on $n*m$ board
10293 Word Length and Frequency	Count length and freq of words
10300 Ecological Premium	Count premiums for farmers

- Sorting:

00110 Meta-Loopless Sorts	Produce Pascal programs that do sorting
00120 Stacks of Flapjacks	Sort a stack of flapjacks using flips
00514 Rails	Sort a train using a station
00538 Balancing Bank Accounts	Figure out who owes who what
00612 DNA Sorting	Sort some DNA based on some trait
00632 Compression (II)	Perform a Burrows Wheel Transform

- Recursion

00155 All Squares	Count number of squares surrounding a point
00432 Modern Art	Generate some modern triangular art

- Palindromes

00401 Palindromes	Determine the type of the word
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- String manipulation/comparison

00644 Immediate Decodability	Determine if the code set is immediately decodable
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Geometry:

- Z-Buffering

00105 The Skyline Problem	Construct a skyline vector
00142 Mouse Clicks	Determine which windows was clicked

- Convex Hulls

00109 SCUD Busters	Determine regions with power after a war
00132 Bumpy Objects	Find a stable position for shapes

- Circles

00121 Pipe Fitters	Calculate the most pipes that can fit
00149 Forests	Determine viewable trees in an infinite forest
10301 Rings and Glue	Determine number of intersecting circles

- Points in Polygons

00143 Orchard Trees	Determine numbers of points in triangles
00634 Polygon	Determine if a point is in a polygon

- Distance

00152 Tree's a Crowd	Generate a histogram of tree distances
10310 Dog and Gopher	Find out if the golpher can get to hole

- Art Gallery Problem

00588 Video Surveillance	Determine if a camera can see all walls
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- Spheres/Globes

00535 Globetrotter	Find distance between two points on earth
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- Polar/Azimuth Coordinates

00404 Radar Scopes	Figure out warnings for planes using radar
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- Area of polygons

00428 Swamp County Roofs	Calculate area of trapezoidal roof tiles
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- Pure Geometry

10283 The Kissing Circles	Determine areas associated with circles in circles
10286 Trouble with a Pentagon	Find the length of largest square in a pentagon
10287 Gifts in a Hexagon Box	Fit circles inside a regular hexagonal box

- Center of gravity

10291 Cut the Legs	Cut a table so that it balances
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- Line intersection

00834 Water Falls

Figure out where water will land

Searching:

- Constraint Satisfaction

00124 Following Orders

Find all consistent orderings

00129 Krypton Factor

Find special "hard" sequences

- Brute Force Searching (no pruning)

00140 Bandwidth

Check all 8! sequences

00418 Molecules

Find the largest molecule that can be made

00565 Pizza Anyone?

Satisfy all topping requests if possible

00616 Coconuts, Revisited

Find the maximum number of people on island.

00629 Test

Find all "non different" sets

00638 Finding Rectangles

Find all rectangles in alphabetical order

- Search with pruning

00624 CD

Find set of songs which fit best on tape

10309 Turn the Light Off

Find min. # of pushes to turn off lights

- Anagrams

00148 Anagram Checker

Find possible anagram sentences from dictionary

00630 Anagrams(II)

Find possible anagrams for words

00642 Word Amalgamation

Find possible anagrams for words

- Word Searches

00581 Word Search Wonder

Find words in a grid

00409 Excuses, Excuses!

Find key "excuses" in a sentences

00425 Enigmatic Encryption

Find the password from a text

00604 The Boggle Game

Find matching words in 2 Boggle boards

- Greedy Algorithms

00410 Balance Station

Minimize Imbalance for a centrifuge