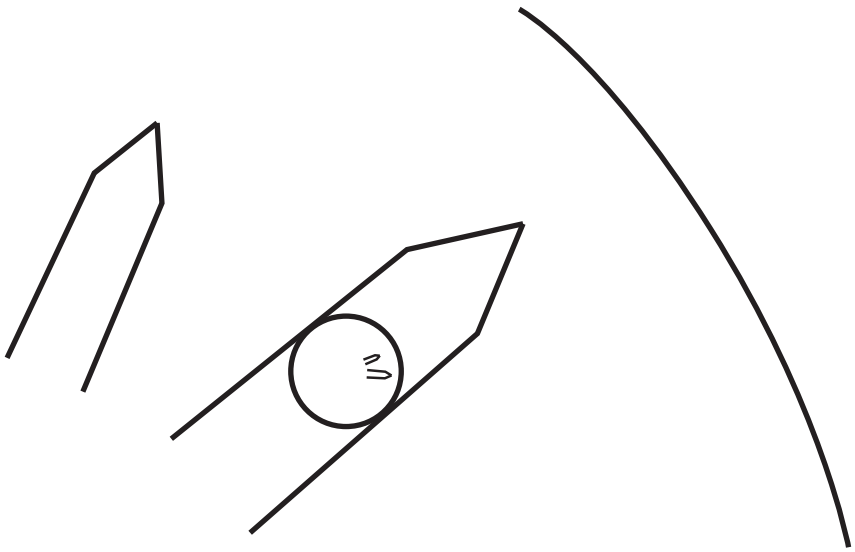
PQRST 12 PUZZLE COMPETITION

PUZZLE 01 (10 points penalty for a wrong answer) 40 points

Clock on Clock

On a big clock's minute hand, there has been put a small clock at 00:00; both facing the same direction. Both clocks always show the correct time. What will be the angle between the two hour hands at 05:20? (The minute hand makes a 360-degree turn in one hour).

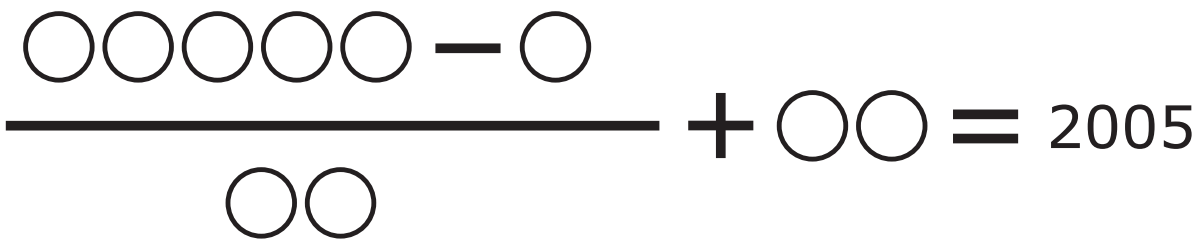


Answer key: Enter the small degree between the two hour hands.

PUZZLE 02 (15 points bonus) 50 points

Once in a Year

Place each of the digits 0 through 9 into the circles once so that the equation becomes correct. 15 points bonus for finding the one with the smallest five-digit number. Numbers can not begin with a zero (0).



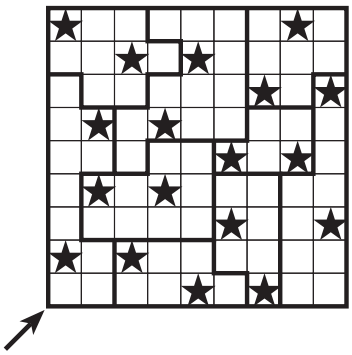
Answer key: Enter the six digits on the top row, followed by the two digits on the middle row, followed by the two digits on the bottom row in order; in the form of: 123456,78,90

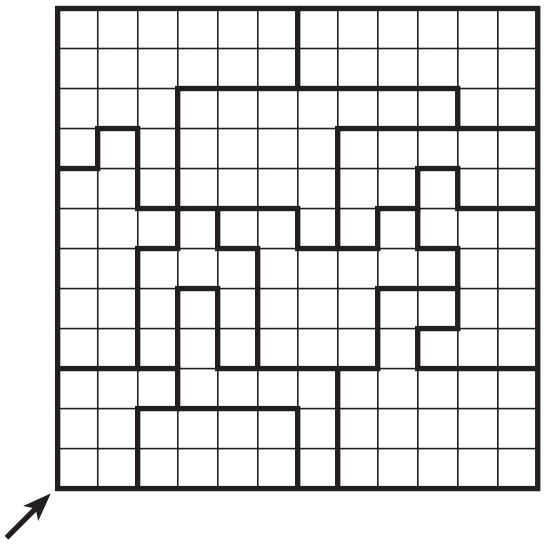
PUZZLE 03 70 points

Star Battle

Locate two stars in each row, in each column and in each block so that they don't touch each other, not even diagonally.

Example:





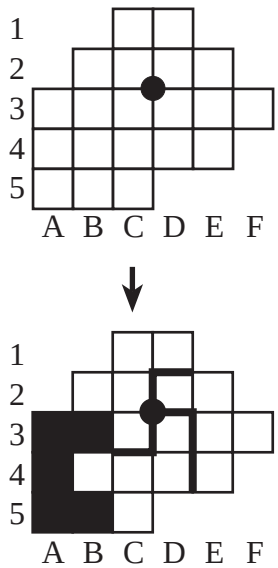
Answer key: Enter the contents of the SW-NE diagonal of the grid in order, using 1 for cells containing stars and 0 for blank ones. For the example, the answer key would be: 000100100

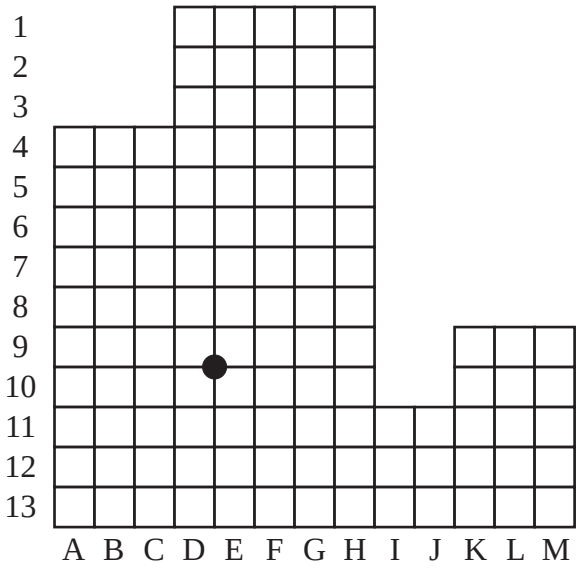
PUZZLE 04 (10 points penalty for a wrong answer) 85 points

Holey Figure

Black out five orthogonally connected squares (a pentomino) and divide the remaining figure into three identical regions following the grid lines. The regions must have the same size and shape, but may be rotated or reflected. While dividing the figure, you must draw three lines, all starting from the black circle and ending on the border of the figure.

Example:





Answer key: Enter the coordinates of the five blacked-out squares. For the example, the answer key would be: A3,B3,A4,A5,B5

PUZZLE 05 60 points

Replaced Cross Sums

All digits from 0 to 9 have been replaced with a unique letter from A to J in the Cross Sums puzzle example below. In Cross Sums, all sums of across and down number groups are given on the left or at the top of that group respectively. Find the match of digits and letters.

A ☐
B ☐
C ☐
D ☐
E ☐
F ☐
G ☐
H ☐
I ☐
J ☐

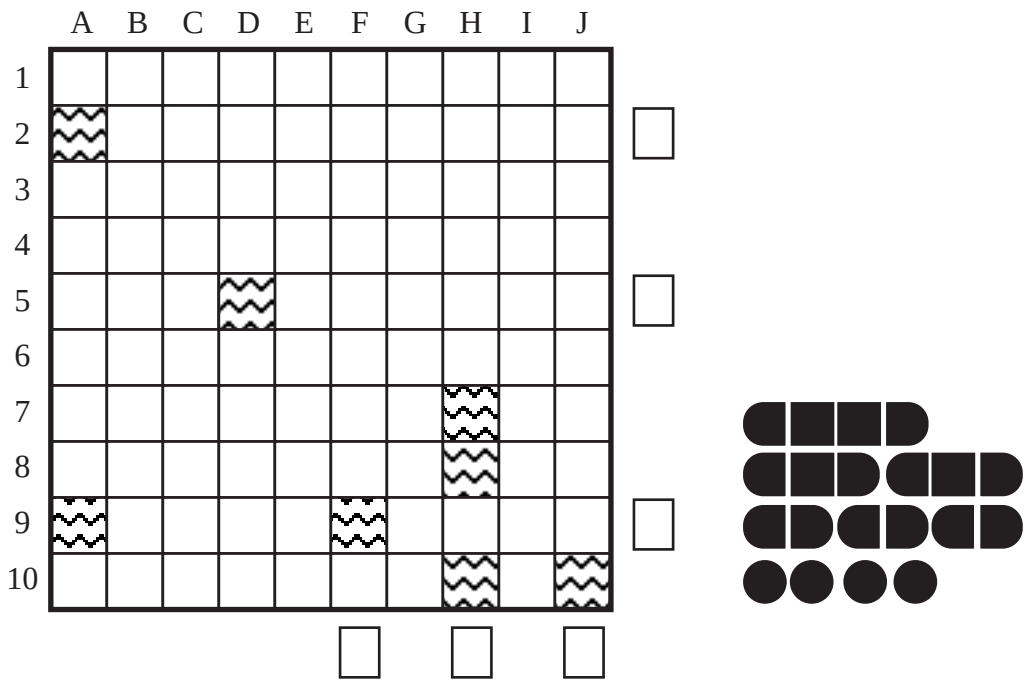
	EA	EI	DH		J	DC	DI
DB	J	C	G	DH	I	C	G
DH	C	B	J	EA	B	F	J
	DF	B DA	B	B	ED DD	J	F
II	A	C	E	B	D	G	I
EI	C	B	EE	F	F	C	EF
EB	D	G	B	DE	C	B	G
DH	G	F	J	EG	A	F	J

Answer key: Enter the digits representing the letters from A to J in order, in the form of: 0123456789

PUZZLE 06 75 points

Unknown Battleships

Place numbers 1, 2, 3, 6, 7, 8 once each into the six empty boxes near the grid. Then locate the 10-ship fleet into the grid so that they don't touch each other, not even diagonally. Numbers on the sides tell the number of ship segments seen in that row or column. There are no ship segments on squares with a water mark.



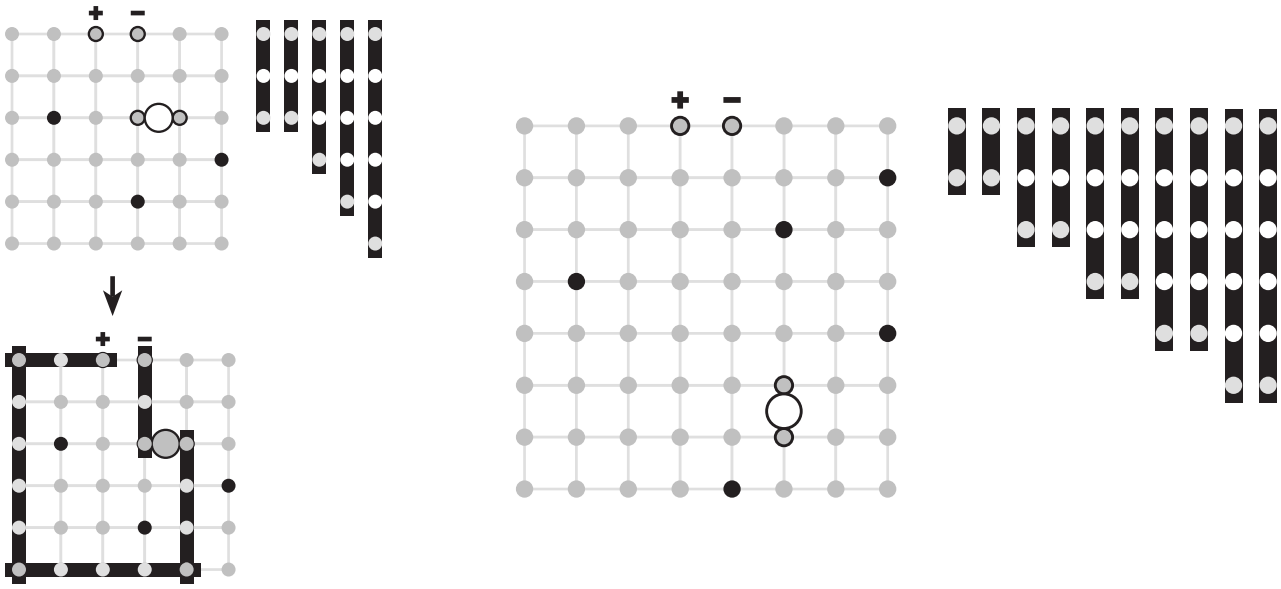
Answer key: Enter the coordinates of the four submarines (1-unit ships) in the form of: A1, J1, A10, J10

PUZZLE 07 95 points

Circuit

Form an electrical circuit with given conductor sticks so that the light bulb turns on. You must start with pin +, use conductors either horizontally or vertically, reach one of the pins of the light bulb, leave it from its other pin and come to pin -. Some pins are isolated (black circles) and can not be part of the path. The path can not touch or cross itself. All given conductors must be used and connected to each other by their end points.

Example with 2-2-3-4-5 conductors:



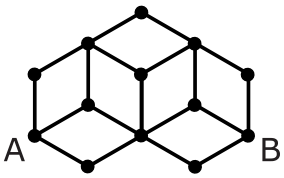
Answer key: Enter the lengths of the conductors in the path in order, starting from pin + and indicating the light bulb's position with letter B. The answer key for the example would be: 2543B2

PUZZLE 08 110 points

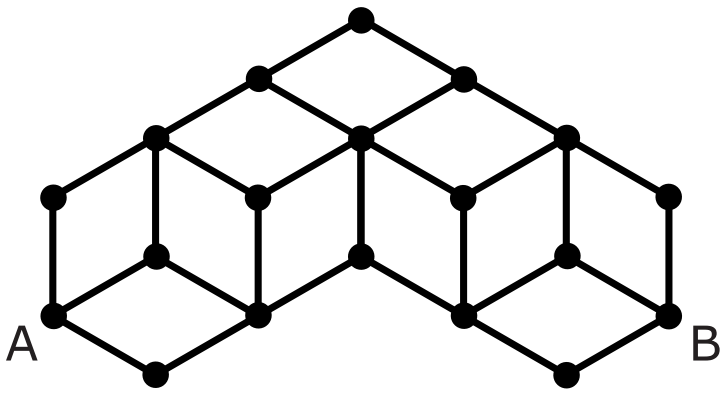
From A to B

How many ways are there from A to B? You can not pass through a dot more than once within a way.

Example:



There are 45 different ways from A to B for the above picture.



Answer key: Enter the number of ways.

PUZZLE 09 180 - (25xU) points

Counting Countries

You have 3 times the consonants, 6 times the vowels and 7 jokers to add up to 100 letters. Write some of the country names from the list below to maximize the total of the letters in the country names. You can use the jokers for any missing letters. All names must be different. Best answer will get 180 points. Other answers will get 25 points penalty for each value under the best answer (No negative points).

x 3

ABCDEFGHIJKLMNOPQRSTUVWXYZ + 7 J

x 6

Afghanistan	Cuba	Iran	Moldova	Slovakia
Algeria	Denmark	Iraq	Mongolia	Slovenia
Angola	Ecuador	Ireland	Morocco	Somalia
Antarctica	Egypt	Israel	Mozambique	Spain
Argentina	Estonia	Italy	Nepal	Sudan
Armenia	Ethiopia	Jamaica	Netherlands	Sweden
Australia	Finland	Japan	Nicaragua	Switzerland
Austria	France	Kenya	Nigeria	Syria
Azerbaijan	Georgia	Korea	Norway	Taiwan
Belarus	Germany	Kuwait	Pakistan	Tajikistan
Belgium	Ghana	Laos	Panama	Thailand
Bolivia	Grenada	Latvia	Paraguay	Tunisia
Brazil	Guadeloupe	Libya	Peru	Turkey
Bulgaria	Guatemala	Liechtenstein	Poland	Uganda
Cambodia	Haiti	Lithuania	Portugal	Ukraine
Cameroon	Honduras	Luxembourg	Qatar	Uzbekistan
Canada	Hungary	Malaysia	Romania	Venezuela
Chile	Iceland	Maldives	Russia	Yemen
China	India	Malta	Rwanda	Zambia
Colombia	Indonesia	Mexico	Senegal	Zimbabwe

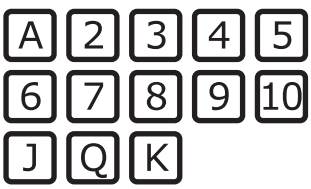
Answer key: Enter your total first. Then enter the country names you used, without indicating the jokers. The answer key will look like: 70: Afghanistan, Algeria, Angola, ...

PUZZLE 10 Bx30 - Ax2 - Mx5 points

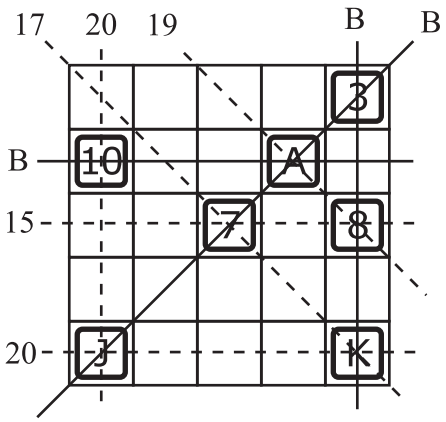
Blackjack

Locate all of the 13 cards (J, Q, K count as 10) into a rectangle with sizes to be chosen by you. Draw a straight line when there are more than one card in a row, in a column or in a diagonal (45-degree). If the total is 21 in a straight line, write B for Blackjack. If it's not 21, write the sum. "A" may count either 1 or 11 always in favor of you (in the example A+8 is not 9). Maximize "(B x 30) - (Area x 2) - (Miss x 5)" where Miss is the total of the absolute differences of the non-Blackjack lines from 21 (e.g. |21-23|=2).

Cards:



Example with A-3-7-8-10-J-K:



Score:

3 x 30 = 90
25 x 2 = 50
(|21-17|+|21-20|+|21-19|+|21-15|+|21-20|) x 5 = 70

Score = 90 - 50 - 70 = -30

Answer key: Enter your score first. Then write the contents of the rectangle row by row using B for blank squares. The answer key for the example would be: -30: BBBB3, 10BBAB, BB7B8, BBBBB, JBBBK

Check the errata column on the main page in case of any mistakes or misinformation.
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