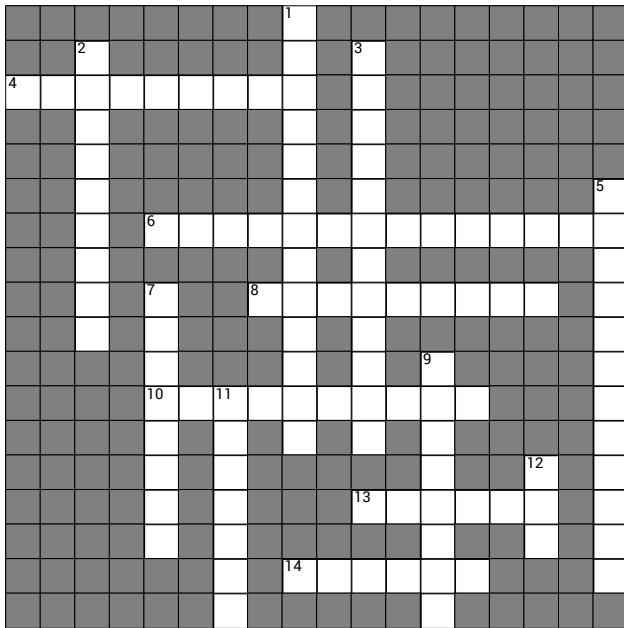


Puzzles

Crossword



Across. 4 How often letters occur 6 Multiples of [caesariphers], in a row. 8 Pre-encrypted text, much less exciting 10 Unbreakable if things are really random 13 160-bit hash function 14 Replaces one with another

Down. 1 Deciphering codes (not necessarily Perl) 2 Key, not algorithm, secrecy 3 rot13 5 Hidden writing, but in Greek 7 Cracked the Lorenz cipher 9 128-bit theoretical limit, but people 11 Shannon measure of coding efficiency 12 Public and private

Takuzu

1			0		1	0		0	
							1		
	0		1						
					1			0	
1		0				0			
				1					1
	1				1			1	
0	1			0		1			1
			0					1	1
0			0		0			0	

Brain Teasers

- A. Guvf vf gur bayl Pnrfne Pvcure gung vf vgf bja vairefr. Juvpu bar vf vg?
- B. Most books have an ISBN number. The ISBN number of "Applied Cryptography" is 0471117099. Let's multiply these digits by the numbers ten to one: $100+94+87+71+61+51+47+30+29+19 = 165 = 15 \cdot 11$. As you can see, the sum is divisible by 11. In fact, this property holds true for all ISBNs.

The number 0100000001 cannot be an ISBN. If we know that one digit is wrong, how many possible ISBNs could it have originally been?

- C. In this puzzle, each letter stands for unique digit that makes the arithmetic equation true. What are the values of the letters in: $SEVEN + SEVEN + SIX = TWENTY$

Issue 105 Solutions

Brain Teasers

- A. 6 steps: work, pork, perk, peak, peat, plat, play.
- B. The king assigns each servant a number from 1-10. The king assigns each bottle a number from 0-999. When he labels them, though, he writes the number on the bottle in binary with ten digits, like this: 0: 00000000 1: 00000001 2: 00000010 3: 00000011 4: 00000100 5: 00000101 ... 999: 111100111 and so on.

Now, each servant takes a small sip from every bottle where the servant's number equals 1 in the binary number on the bottle. So, the 1st servant drinks from every other bottle. The second servant drinks from bottles 2, 3, 6, 7, 10, 11, etc.

Then based on the combination of servants that die, he can identify the poisoned bottle. For example, if none of them die, the 0th bottle was poisoned because none of them drank from it. If only servant 1 dies, then bottle 1 was poisoned, because he's the only person who drank from it. Finally, if servants 1, 2, 3, 6, 7, 8, 9, and 10 die, then the 999th bottle was poisoned.

Takuzu

1	1	0	0	1	0	1	1	0	0
0	1	1	0	0	1	0	0	1	1
1	0	1	1	0	0	1	1	0	0
0	1	0	0	1	1	0	0	1	1
1	0	0	1	0	1	1	0	1	0
1	0	1	0	1	0	0	1	0	1
0	1	0	1	0	1	1	0	1	0
0	0	1	1	0	1	0	1	0	1
1	0	1	0	1	0	0	1	1	0
0	1	0	1	1	0	1	0	0	1

Regular Expression Crossword

	(HST HAST TO EH GT)	(OY YO HEN)+	(MES OSTE)\s	[S\s]{S\s}+	[LET]\s+HE	[s0m]+c	(MA MAW)\s{1 2}	[END]+(NO END)	(TT \s?)\s{0 1}	0[S\s]*+(M D)\s?	0[A\s]*+
(LONG HOW\s)+(POP \s	H	O	W		L	O	N	G		D	O
(\s)(WANT YOU\s)+\s{		Y	O	U		W	A	N	T		
(THESE THOSE)\s[MESA	T	H	E	S	E		M	E	S	S	A
[GETS]{3}\s(MET TO\s	G	E	S		T	O		R	E	M	A
(\sIN IN\s)[SECRET]+	I	N	S	E	C	R	E	T	?		

■ Emily Saunders Walmsley