# **BEST PROBLEMS**

# Rassegna dei migliori problemi

diretta da **Antonio Garofalo** Col sostegno dell'API (Associazione Problemistica Italiana)

#### Hanno collaborato a questo numero:

Thomas Brand, Mr. Veneziano, Awani Kumar.

#### EDITORIALE

Welcome to Germán Bielefeldt, José Luis Velasco, Uberto Delprato for their first publication on Best Problems.



← Kostas Prentos - <u>Original - Out competitions.</u> r3n3/pbbp1ppp/5kn1/8/8/8/P1PPP1PP/RNBQKBNR SPG 11.0 (14+11) C+

1.f4 ⓓ c6 2.f5 ⓓ e5 3.f6 ⓓ g6 4.fxe7 ㉒ f6 5.exd8=Ꮿ 单d6 6.b4 啥e7 7.b5 單 xd8 8.b6 ㉒ e8 9.bxc7 啥f6 10.cxd8=☜ 单c7 11.㉒xb7 单xb7

Comment by Author: A Schnoebelen and a Prentos Knight promote on the same square (d8). A Rook captures the former and is captured by the latter. White homebase.

#### Memorial Tourney Jorge Marcelo Kapros 2024-2025

Kapros died in Moreno, Province of Buenos Aires, on August 27, 2023 at the age of 67. During his life, he resided in the city of El Palomar, Argentina. He had the title of International master of the FIDE for chess composition.

The Unión Argentina de Problemistas de Ajedrez (UAPA) organizes the Memorial Tourney Jorge Marcelo Kapros, containing three sections - **Theme free:** 

Twomovers (≠2) Judge: Miguel Uris (Spain)

Helpmates (H≠2) Judge: Ricardo de Mattos Vieira (Brazil)

Helpmates (H≠3) Judge: Jorge Joaquín Lois (Argentina)

Please send your entry with diagram, full solution, name and address of author, to the tournament director: **Mario Guido García**, producer and editor the UAPA.

E-mail: marioggarcia@gmail.com – All received problems will be presented to the judge in anonymous form.

Prizes, Honourable Mentions, Commendations and Special Nominations will be awarded.

The preliminary and final award will be published in mid-2025 will be available in the website https://www.problemistasajedrez.com.ar, and will be sent to all participants by e-mail – Closing date: 30<sup>th</sup> November 2024.

Please reprint

Anno XXVIII - n. 110

2°/2024 - April

# Inediti (Originals)

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≠2\* (10+9) C+





≠2 v... (10+14) C+

5870. D. Gatti Italia



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5867. J.A. Garzon & M. Uris - Spagna

5863. G. Bielefeldt

Cile



5864. G. Bielefeldt

≠2 (14+9) C+

5868. J.L. Velasco Spagna

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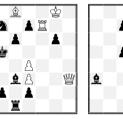
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5865. F. Magini

≠2 v (7+7) C+





≠2 (8+8) C+

5872. A. Pankratiev & Y. Gorbatenko Russia



≠3\* (11+12) C+

5873. M. Uris Spagna



≠3 vvv (11+8) C+



≠2 v (12+11) C+

5871. A. Pankratiev

Russia









H≠2 (5+7) C+ 2 sol.

**≠2, n. 5862-5868** (Judge 2024: NN **≠3**, n. 5869-5872 (Judge 2024-2025: Antonio Garofalo).

#### 5874. V. Liskovets Bielorussia



H≠1,5 (2+5) C+ 8 sol.

5878. M. Vasyuchko & M.T. Galma Ucraina



5875. J.J. Lois

H≠2 (5+13) C+ 2 sol.

5879. A. Armeni Italia





H≠2 (3+9) C+ 2 sol.

5880. A.V. Ivunin

& A. Pankratiev

Russia

5877. E. Zimmer

Polonia

h=2\* (3+4) C+

5881. A.V. Ivunin & A. Pankratiev Russia



H≠2 (5+6) C+ 2 sol.

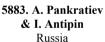
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H≠3\* (3+3) C+

EN

5882. A. Pankratiev Russia

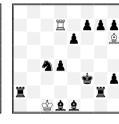




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H=2 (6+3) C+

2 sol.



H≠3 (3+12) C+ 2 sol.

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5884. E. Zimmer Polonia

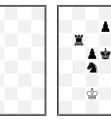


H≠3 (3+13) C+ 4 sol.

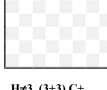
5885. V. Koci Rep. Ceca



H≠3 (2+12) C+ b)  $\triangle d6 \rightarrow h6$ 



H≠3 (3+10) C+ b) **▲**f4→f5



H**≠**3 (3+3) C+ b) 🗳 d8→f8

H≠2, H=2, n. 5873-5879 (Judge 2024-2025: NN H≠2.5/H≠3, H=2.5/H=3, n. 5880-5885 (Judge 2024-2025: NN). **\$ \$** 

5886. A.V. Ivunin & A. Pankratiev Russia



H≠3,5 (3+8) C+ 2 sol.

5890. M. Degenkolbe & R. Wiehagen Germania



H≠5,5 (2+7) C+ b) **X**b3→b7

5894. S. Luce Francia



hs≠3 (1+3+1) C+ b) ▲a2→e6 Alphabetic Chess

5887. S. Hudak Slovacchia

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2 sol.

H≠3.5 (3+7) C+

5891. F. Magini

Italia

H≠6 (2+7) C+

5895. S. Luce

Francia

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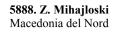
H=4 (3+6) C+

**扇**=Grasshoppers

1 sol.

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H≠4 (3+6) C+ 3 sol.

5892. M. Vasyuchko & M.T. Galma Ucraina

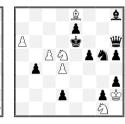


5889. U. Delprato



H≠5 (3+4) C+ 2 sol.

5893. J.J. Lois Argentina



hs≠3 (7+11) C+ b) **≜**h8→c3

5896. L. Kekely Slovacchia



sh=8 (1+4) C+ b) ▲a7→b7 Without check ≱=Lion



hs‡3,5 (8+4) C+ 2 sol.

5897. S. Luce Francia



H**≠7,5 (2+4)** C+ Alphabetic Chess

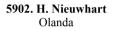
H**≠**n, n. 5886-5891 (Judge 2024-2025: Antonio Garofalo). hs**≠**2/n, n. 5892-5893 (Judge 2024-2025: NN). ż

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H≠6 (1+3) C+ f2=Royal piece **帚**=Grasshopper **■**=Multi-Vizir Image (Eagle)





H≠3 (4+5) C+ 2 sol. PWC



5899. S. Luce

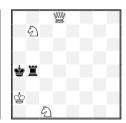
Francia

sd=23 (3+12) C+ S= Shooter Grasshopper/Knight

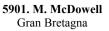
5903. L. Kekely

Slovacchia

5900. I. Bryukhanov Ucraina



S≠8 (4+2) C+ Circe





H≠2 (4+5) C+ 2 sol. Anti-Kings

5905. G. Tar Ungherìa

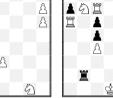


ss≠14 (7+5) C+ C+ from Author



5904. S. Luce

Francia



hs≠5 (8+4) C+ **♣**=Grasshopper

hs≠2,5 (8+10) C+ Zeroposition: a)  $\blacksquare a6 \rightarrow e2$ b)  $#f5 \rightarrow f8$ Anticirce

Fairies n. 5894-5905 (Judge 2024: (NN).

### Note agli inediti (Fairy elements)

- sh = aiutomatto a serie (Serie helpmate/helpstalemate).
- hs = helpselfmate.
- sd = diretti a serie (Serie direct)

ss = serie selfmate

• Alphabetic Chess (Alphabétiques): Each move of either side must be by the piece occupying the first square in the order of a1, a2, a3...b1, b2, b3...c1, c2, c3... etc., which is able to make a legal move. Castling is permitted if the King has the right to make a legal alphabetical move, provided the usual other rules for that move are obeyed.

• Anticirce: On making a capture, any unit (including K) is reborn on its game-array square (as determined according to Circe rules), and the captured unit disappears. Since rebirth is obligatory, a capture is legal only if the relevant rebirth-square is unoccupied. A capture may be made from a rebirth-square. Promotion with capture is legal provided the rebirth-square of the promoted unit is unoccupied. In Anti-Circe type Calvet capture on a rebirth-square is allowed (it is default type if type is omitted). In Anti-Circe type Cheylan capture on a rebirth-square is not allowed.

• Anti-Kings: A King is in check, if it is not attacked.

• **Circe:** When captured, a piece (other than King) is reborn on its game-array square. Rook, Bishop and Knight are reborn on the square that is the same color as the square of the capture, Pawns on the file of the capture. If the game-array square is occupied, the captured piece disappears, as in a normal capture. Castling is permitted with a reborn Rook. Fairy pieces are regarded as being the result of promotion and so are reborn ori the promotion-square ori the file of the capture.

• **Eagle=Aigle:** Se déplace comme une Sauterelle (Sauteur(0,1)+(1,1)), ma dévie de 90° (dans un sens ou dans l'autre) au-dessus du sautoir. La case d'arrivée est contiguë au sautoir. [Si muove come un Grasshopper ma devia di 90° in un senso o nell'altro appena dopo l'ostacolo. La casa d'arrivo è contingua all'ostacolo. - Moves like a Grasshopper but deflects 90° in one sense or another just after the obstacle. The arrival square is adjacent to the obstacle.]

• **Grasshopper**: Moves along Queen-lines over another unit of either colour to the square immediately beyond that unit. A capture may be made on arrival, but the hurdle is not affected.

• Lion: Moves and captures like a Grasshopper, but its arrival square may be any number of squares beyond the hurdle, provided the line is clear.

• Multi-Vizir: Can play many consecutive moves of Vizir (0,1) till it captures.

• **PWC = PlatzWechselCirce:** A captured unit is reborn, according to **Circe** rules, on the departure square of the capturing unit. (Quando viene fatta una cattura, l'unità catturata viene piazzata nella casa del pezzo che l'ha appena catturata, in pratica scambiandosi il posto con il pezzo catturante.)

• **Royal piece:** =Royal unit, a unit having the function but not the move of a King. A threat to capture it is check, and if this threat cannot be removed the position is one of checkmate.

• Shooter Grasshopper/Knight: Moves without capture like a Grasshopper and captures like a Knight.

• Without check: Sans échec: Un échec qui n'est pas un mat est illégal. [Uno scacco che non sia scaccomatto è illegale.]

# Soluzioni Inediti

Fascicolo n. 110

Commenti degli autori e del redattore.

**5862.** ( $\neq$ 2, Giuseppe Sardella) n1N4b/K2B1nRr/Q1p4q/p1Pk1P2/8/3N1P2/4r3/B7 1...Od6 a 2. exc6‡ A 1...Oe5 b 2. Oe7‡ B **1.\blacksquareg4!** [2.Wc4‡] 1...Od6 a 2.Wxc6‡ C 1...Oe5 b 2. $\blacksquare$ d4‡ D 1...Wf4 2.exc6‡ A 1... $\blacksquare$ xc2 2.Oe7‡ B [ 1...Ob6 2.Oxb6‡ 1...Ed4 2. $\blacksquare$ xd4‡ 1... $\blacksquare$ e4 2.fxe4‡] Rukhlis

#### 5863. (≠2, Germán Bielefeldt)

b7/r1p5/1P2p1K1/N3kp2/QP4R1/p2Rp1P1/Pn2P2N/1n3rbB 1.<sup>1</sup>/2 c6! tempo 1...  $\Xi_{a\sim 2}$ ,  $\underline{\oplus}xc7$  1...  $\underline{\Xi}b72$ ,  $\underline{\oplus}c5$  1...  $\underline{\&}b72$ ,  $\underline{\oplus}xc7$  1...  $\underline{\oslash}1\sim 2$ ,  $\underline{\oplus}c3$  t1... 22~ 2. 2c4 ± 1... If~ 2. 2f3 ± 1... 2f2 2. 2f3 ± 1... If f2 2. I xe3 ± 1... <sup>(a)</sup> xh2 2. <sup>(a)</sup> xc3<sup>(1)</sup> 1... <sup>(a)</sup> xc6 2. <sup>(b)</sup> xc6<sup>(1)</sup> 1... <sup>(a)</sup> f4 2.gxf4<sup>(1)</sup> 1... f4 2. <sup>(a)</sup> g5<sup>(1)</sup> g 1...cxb6 2. <sup>1</sup>/<sub>2</sub>d6<sup>+</sup> 1...fxg4 2. <sup>1</sup>/<sub>2</sub>xg4<sup>+</sup> 5864. (≠2, Germán Bielefeldt) 8/2p3Bb/2P3pQ/1R1ppN2/NbP1k1PP/3pP1PK/7n/3BR3 1. 2d4! tempo 1...exd4 2. <sup>@</sup>f4t 1...dxc4 2. <sup>[]</sup>xe5t 1...d2 2. <sup>@</sup>c2t 1... <sup>@</sup>~ 2. <sup>@</sup>f3t 1... 皇 xe1 2. ②c5‡ 1... 皇 a3 2. ②c3‡ 1... 皇 g8 2. 豐 xg6‡ 1... g5 2. 豐 xh7‡ 5865. (≠2, Fabio Magini) 8/4R3/p1KN1np1/8/2pkp3/Q7/2P1P3/N2n4 1.  $\Xi$  e6? tempo 1... ⓑb2 2.e3‡ A 1... ⓑe3 2.c3‡ B 1... ⓑc3 2.≝c5‡ C 1...c3 2.≝c5‡ D ma 1...e3! 1.≝g3! tempo 1... \Db2 2.c3t B 1... \De3 2.\end{aligned}e5t E 1... \Dc3 2.e3t A 1...c3 2.\Db3t F 1...e3 2.\end{aligned}e5t E Feldmann 2, Somov B2, Rukhlis condensé (WinChloe) 5866. (≠2, Miguel Uris) 3NbKB1/1pp2n2/2r3Q1/1Npkp1R1/r3p3/BP1n1P2/7p/3R2bq 1.<sup><sup>1</sup></sup><sup>1</sup>/<sub>b</sub> h5? [2.<sup><sup>1</sup></sup>/<sub>4</sub> xe5#] 1...<sup><sup>1</sup></sup>/<sub>4</sub> e6, a 1...<sup><sup>1</sup></sup>/<sub>4</sub> d4, b 1...<sup><sup>1</sup></sup>/<sub>4</sub> d4 c 1.<sup>™</sup>e6+? ma 1...<sup>™</sup>xe6! a 1. <sup>@</sup>f5? [2. <sup>@</sup>xe5‡] 1... <sup>≜</sup>d4 2. <sup>@</sup>xe4‡ 1... <sup>□</sup>e6 2. <sup>@</sup>xe6‡ ma 1... <sup>□</sup>d4! b 1.f4? [2. □ xe5‡] 1... □ d4 2. □ c3‡ 1... □ e6 2. □ xe6‡ ma 1... □ d4! c **1.≜b2!** [2.<sup>□</sup>xe5‡] 1... <sup>□</sup>e6 a 2.<sup></sup><sup>w</sup>xe6<sup>±</sup> 1... <sup>□</sup>d4 b 2.<sup></sup><sup>0</sup>c3<sup>±</sup> 1... <sup>1</sup>ad4 c 2.<sup>w</sup>xe4<sup>±</sup> Kharkov 1 - Separation of refutations - Defences on same square 5867. (≠2, José Antonio Garzon & Miguel Uris) N2B2K1/1Bn1pR2/3p2p1/Rnk5/P3P3/PP1bP2Q/2p1p3/r2r4  $1. \overset{@}{=} c8? [2. \overset{@}{=} xc71] 1... \overset{@}{=} xe4 2. \overset{@}{=} xb51 ma 1... \overset{@}{=} xa3!$ **1.營h8!** [2.營d4‡] 1... <sup>a</sup>xe4 2. <sup>a</sup>c3<sup>±</sup> 1...e5 2. <sup>a</sup>xc7<sup>±</sup> 1...d5 2. <sup>a</sup>xe7<sup>±</sup> 1... <sup>a</sup>c4 2.b4<sup>±</sup> 1... <sup>b</sup>e6 2. <sup>a</sup>b6<sup>±</sup> Comment by Authors: 1. $ectile{eq: 1.ectile{eq: 1.$ **1.**<sup> $\oplus$ </sup>**h8!** [2.<sup> $\oplus$ </sup>**d**4 $\neq$  (<sup> $\equiv$ </sup>*pin* - <sup> $\oplus$ </sup>*mate*)] 1...  $\hat{a}$  xe4 **a** 2.  $\overset{w}{=}$  c3≠ **B** ( $\stackrel{w}{=}$  pin -  $\overset{w}{=}$  mate) 1...e5 2. $\exists$ xc7≠ ( $\exists$  pin -  $\exists$  mate) 1...d5 2.Bxe7# (當 pin - 奠 mate) 1...②e6 2. ≜b6≠ 1...Bc4 2.b4# Exchange of functions (Pin/Mate); Pin-mate (x6); Changed mate. 5868. (≠2, José Luis Velasco) 5Qb1/2p3K1/4pP2/2ppk3/3RP1p1/b3B1P1/3N4/8 1. @e8! [2. = xd5:]1... 當d6 2. ②c4‡ 1...c6 2. 豐b8‡ 1...cxd4 2. 皇f4‡ 1...dxe4 2. 豐h5‡ Comments by Author: Flight giving key, Selfblock - Pinning - Line opening.

5869. (≠3, Leonid Lyubashevsky & Leonid Makaronez) 8/K2Npb2/2R1PPr1/1Pp3pp/1Pp1k3/4b1P1/3ROppP/1n6  $1... \oplus f5 2. \oplus f3 + \oplus f4 3. \oplus d5 \pm 1... \oplus xe6 2. \oplus xe6 + \oplus f5 3. \oplus e5 \pm$  $1, \exists d5! [2, \exists e5 + \textcircled{a}d4 3, \textcircled{a}xe3 \ddagger]$ 1...c3 2.<sup>₩</sup>d3+ 🖄f3 3.<sup>4</sup>e5‡ 1... <sup>(a)</sup>xd5 2. <sup>(a)</sup>xe3 [3. <sup>(a)</sup>b6‡ 3. <sup>(a)</sup>e5‡] 1...cxb4+2,  $= d4+ \Rightarrow xd43$ ,  $= xc4\pm 2... \Rightarrow f53$ ,  $= c2\pm 2.1$ 1...exf6 2.  $\Xi$  cd6 [3.  $\Im$  xc5†] Comments by Authors: Changed mates, Active sacrifice. 5870. (≠3. Daniele Gatti) 1R1K2Q1/6P1/kB1P1p2/2P2p2/2P5/1p2R2B/5p2/N4qrb 1. \arrow a8+? 1... \arrow xa8! 1.<sup>™</sup>f7? [2.<sup>™</sup>a7‡] ma 1...<sup>□</sup>xg7! 1. 0c2? [2. 0b4!] ma 1... 0e1!**1.≜g2!** [2. \armma a8‡] 1... <sup>(a)</sup>xg2 2.<sup>(a)</sup>f7 [3.<sup>(a)</sup>a7<sup>(t)</sup>] <sup>(a)</sup>b7 3.<sup>(a)</sup>xb7<sup>(t)</sup> 2...<sup>(a)</sup>xc4 3.<sup>(a)</sup>xc4<sup>(t)</sup> 1... <sup>□</sup>xg2 2. <sup>□</sup>a8+ <sup>(a)</sup>b7 3.<sup>1</sup>/<sub>2</sub>d5<sup>±</sup> 1...,豐xg2 2. ②c2 [3. ②b4‡] bxc2 3. 罩a3‡ After 3875. Daniele Gatti. Best Problems 2017. 5ª Lode 1R3N2/8/kB6/2P2P1p/P1p5/4p2Q/KP3p1p/1BN2qrb - ≠3 (11+9) C+ 1.④e6? [2.④c7‡] ma 1...逼g7! 1.豐f3? [2.邕a8‡] 1...邕g7 2.邕a8+ 邕a7 3.邕xa7‡ ma 1... 逸xf3! 1.響g2! [2.罩a8‡] 1... 拿xg2 2. ②e6 [3. ②c7:] 1... 邕xg2 2. 邕a8+ 含b7 3. 奠e4‡ 1... <a>
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 b4<sup>±</sup>]
 cxd3 3. <a>
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 xd3<sup>±</sup> 5871. (≠3, Alexandre Pankratiev) 8/prP1pBpb/1P2P1P1/3N1kpr/1RR2P1p/4pP1q/6n1/8 1, = b5? [2, @c3+ @f6 3, @e4!]1...  $\exists xb6 2. \\ xb6 + \\ bf6 3. \\ d7 \\ ma 1...a6!$ **1.**  $\square$  **c5!** [2.  $\square$  **c**3+ e f6 3.  $\square$  **e**4 $\ddagger$ ]  $1... \cong xf3 2. xe3 + f6 3. \equiv f5 \pm 1... \cong xg6 2. xe7 + f6 3. g8 \pm$ 1... $\Im$ xf4 2. $\Im$ xf4+  $\ddagger$ f6 3. $\Im$ xh5 $\ddagger$  1... $\exists$ xc7 2. $\Im$ xc7+  $\ddagger$ f6 3. $\Im$ e8 $\ddagger$ 1...axb6 2.2xb6 + = 16 3.2d7Batterie de Siers, Mat (suite) changé(e) au moins 2 fois (WinChloe). 5872. (≠3, Alexandre Pankratiev & Yuri Gorbatenko) 8/1n6/bpN5/2pPR2Q/BpkpN3/1Rp2r2/2Pp1r2/1Kb5 **1.\underline{\mathbb{G}} g6!** [2. $\underline{\mathbb{G}}$ a5+ $\underline{\mathbb{G}}$ xa5 3. $\underline{\mathbb{G}}$ d6‡ 2...bxa5 3. $\underline{\mathbb{G}}$ xa6‡]  $1... \triangleq b5 2. \blacksquare xb4 + cxb4 3. \triangleq b3$ 1... ⊑ f6 2. ∅d6+ ∅xd6 3. ≝d3‡ 2... ⊑xd6 3. ≝d3‡ 1...d3 2. 2xd2+ axd2 3. 44 t 2... xd2 3. 44 t 2...cxd2 3. Keller (paradoxe); (WinChloe). 5873. (H≠2. Miguel Uris) 2B2Kn1/8/n3q3/1p1k4/R2P4/2pp4/4P3/8 1.6b4 e3 2.6c4 = xe611.<sup>™</sup>d7 e4+ 2.<sup>™</sup>e6 <sup>™</sup>xa6‡

Comments by Author: Chumakov theme (b-s, simplified, 2, 2) Exchange of functions (bSa6/bBe6, Captured/Pinned) Exchange of functions (wRa4/wBc8, Mate/Passive pin) Model mates (x2) - Anticipatory self-pin (x2) – Distant selfblock (x2) Meredith

#### 5874. (H≠1.5, Valery Liskovets)

n7/KR6/8/kr6/pp6/8/8/8

1...<sup>I</sup>c7 2.<sup>I</sup>c5 <sup>I</sup>xc5<sup>‡</sup> 1...<sup>I</sup>d7 2.<sup>I</sup>d5 <sup>I</sup>xd5<sup>‡</sup> 1...<sup>I</sup>e7 2.<sup>I</sup>e5 <sup>I</sup>xe5<sup>‡</sup>

 $1\dots \label{eq:results} 1\dots \label{eq:results} \stackrel{\frown}{=} f7\ 2.\ \label{eq:results} f5\ \label{eq:results} \stackrel{\frown}{=} xf5\ \label{eq:results} 1\dots \label{eq:results} \stackrel{\frown}{=} g7\ 2.\ \label{eq:results} \stackrel{\frown}{=} g7\ 2.\ \label{eq:results} \stackrel{\frown}{=} xg5\ \label{eq:results} 1\dots \label{eq:results} \stackrel{\frown}{=} h7\ 2.\ \label{eq:results} \stackrel{\frown}{=} h5\ \label{eq:results} \stackrel{\frown}{=} xh5\ \label{eq:results} \stackrel{$ 

1...  $\Xi$  b6 2.a3 (tempo)  $\Xi$  a6‡ 1... B b8 2. D b6  $\Xi$  a7‡

Comments by Author:

h#1.5 miniature-task: 8 solutions in the Neumann form without repetitions.

8=6+1+1 (solutions are of 3 types).

8 sol. is the presumable record among 1.5- and 2-movers with 8 or less pieces excepting the absolute record-tanagra https://pdb.dieschwalbe.de/P0564727 by Mintz with 12 (trivial, uniform) solutions. Closest is the recent problem https://pdb.dieschwalbe.de/P1400481 by Grinchenko (Problemist Ukrainy, 2022, h#1.5) with 9 pieces and 8 sol.

• Active sacrifice (black)  $\times 6$  • AntiZielElement (W1, self-pin) • Hideaway (bR, sacrificial)  $\times 6$ 

• Hideaway (wK) • Self-pin/unpin (white) • Tempo move (bP, waiting) • Model mate × 6

• Umnov.

(Apropos, in general, the PDB contains 300+ h#1.5-problems including 80+ miniatures without twins.)

#### 5875. (H≠2, Jorge J. Lois)

8/8/Kn3rp1/1n2kpN1/1N4p1/B4qp1/3pbpp1/7O 1.  $\textcircled{B}_{f4}$   $\textcircled{B}_{h8}$  2.  $\textcircled{O}_{d5+}$   $\textcircled{O}_{c6\ddagger}$  1.  $\textcircled{B}_{d5}$   $\textcircled{B}_{e1}$  2.  $\textcircled{O}_{d4+}$   $\textcircled{O}_{d3\ddagger}$ Comments by Author: Thematic content: • Self-block (bOf3)  $\times$  2 • Bi-valve (wSb4-wBa3-bBe2) • Bi-valve (wSb4-wBa3-bRf6) • Model mate  $\times 2$  • Pin-mate  $\times 2$ 5876. (H≠2, Leonid Makaronez) 1r1q4/5p2/3Q1n2/2n5/3K4/pkP5/1r6/2b5 1. 當c2 當c4 2. ②cd7 豐d3t 1. ②a4 當d3 2. ②d7 豐d5t 5877. (H=2, Eligiusz Zimmer) 8/8/8/2B3np/5p2/5P1k/5K2/8  $1... \triangleq e7 2. \Leftrightarrow h4 \Leftrightarrow g2 = 1. \land xf3 \Leftrightarrow xf3 2.h4 \triangleq g1 =$ 5878. (H≠2, Mikola Vasvuchko & Mikhaïlo T. Galma) 1nk5/2pp4/Ppp5/NP6/3K3B/8/8/8 1.bxa5 b6 2.a4 b7: 1.cxb5 2.66 2.b4 a7: Comments by Authors: Exchange of functions (bPb6/bPc6, Active piece / Passive) Exchange of functions (wSa5/wPb5, Captured / Mate) JT Onkoud 50 theme Tempo move (bP, waiting, type 1)  $\times$  3 Zilahi (passive, SP, 2) Model mate  $\times 2$  [View in Helpmate Analyzer] 5879. (H=2, Alberto Armeni) 8/N7/8/2K1k1P1/1P3p2/5P2/8/r2B4 1.  $\exists xd1 \otimes b5 2$ .  $\exists d4 \otimes xd4 = 1$ .  $\exists xa7 \otimes a4 2$ .  $\exists d7 \otimes xd7 =$ Zilahi, Sacrifice noir, Captures réciproques, Pats modèles (WinChloe)

#### 5880. (H≠3, Alexeï V. Ivunin & Alexandre Pankratiev)

8/3R1ppp/4p2B/8/2np4/5k1p/r5r1/2Kbb3  $1. \triangleq h4 \exists xf7 + 2. \triangleq g3 \exists f1 3. \triangleq g4 \triangleq f4 \ddagger 1. \exists g3 \exists xd4 2. \exists ag2 \triangleq d2 3. \triangleq e2 \exists f4 \ddagger$ 5881. (H≠3. Alexeï V. Ivunin & Alexandre Pankratiev) 2n1r3/8/2KR1p1p/2p1ppp1/3pk1r1/2bp4/8/2B5 1.c4  $\exists xd4+2$ ,  $\forall xd4 \triangleq a3$  3,  $\exists e4 \triangleq c5$ ; 1.  $2b6 \triangleq f4$  2.exf4  $\exists d8$  3,  $\forall e5 \equiv xe8$ ; 1.f4  $\triangleq$  e3 2.  $\Leftrightarrow$  f5  $\triangleq$  xd4 3.e4  $\blacksquare$  xf61 1.  $\div$  f3  $\blacksquare$  xf6 2.  $\Leftrightarrow$  g3  $\triangleq$  f4+ 3.  $\Leftrightarrow$  h4  $\blacksquare$  xh61 Comments by Authors: BK moves only, Chumakov theme (pp, 2), Helledie theme, Hideaway (bS) [View in Helpmate Analyzer] 5882. (H≠3. Alexandre Pankratiev) 8/8/2K5/8/2p5/1rkN4/1N6/8 1... = 12.Chumakov, ideal mate. 5883. (H≠3, Alexandre Pankratiev & Ivan Antipin) 8/3pq3/1r3pn1/2pkB3/2n1Rp2/4p3/2K5/8 a)  $1. \Xi e6 \oplus d3 2. \oplus d6 \Xi c4 3. \oplus xe5 \Xi xc5 \pm b) 1. fxe4 \oplus g3 2. \oplus d4 \oplus e1 3. d5 \oplus c3 \pm Zilahi.$ 5884. (H≠3. Eligiusz Zimmer) 2bK4/NrN5/1k6/8/8/8/8/8 a) 1. \$\u00e9xa7 \u2012d5 2. \$\u00e9a8 \u00e9xc8 3. \$\u00e9a7 \u2012b6t b) 1. \$\u00e9xc7 \u2012b5+ 2. \$\u00e9d8 \u2012d7 \u2012e6t 5885. (H≠3, Vladimír Koci) 1b6/2p5/r1rP2p1/5n1b/4pk2/4np1K/q7/8 a) 1. <sup>[]</sup> c4 d7 2.c6 d8=<sup>[]</sup> 3. <sup>[]</sup> e5 <sup>[]</sup> e6<sup>‡</sup> b) 1.g5 h7 2. <sup>[]</sup> f7 h8=<sup>[]</sup> 3. <sup>[]</sup> e6 <sup>[]</sup> g6<sup>‡</sup> 5886. (H≠3.5. Alexeï V. Ivunin & Alexandre Pankratiev) 8/2p4B/2pb2Rn/8/2p1k3/1q3r2/8/K7 1...  $\Xi$  g4+ 2.  $\doteq$  e5  $\doteq$  e4 3.  $\Xi$  f6  $\doteq$  xc6 4.  $\boxdot$  f5  $\Xi$  e4‡  $1... = g7 + 2. = d5 = xc7 3.c5 = b7 4. = c6 = e4^{+}$ Umnov différé, Mats modèles, Mats sur la case initiale du Roi adverse (WinChloe) 5887. (H≠3.5. Stanislav Hudak) 6bK/8/2pbr3/2rkp3/8/1P6/B7/8 1... \$g7 2. \$\mathbb{I} e7+ \$g6 3. \$e6 \$b1 4. \$\mathbb{I} d5 \$f5\$;  $1... \stackrel{\text{(a)}}{=} b1 2. \stackrel{\text{(a)}}{=} c4 \stackrel{\text{(a)}}{=} d3 3. \stackrel{\text{(a)}}{=} d4 \stackrel{\text{(a)}}{=} a6 4.c5 \stackrel{\text{(a)}}{=} b7$ 5888. (H≠4, Zlatko Mihailoski) 8/r7/nk6/1q1B4/1P6/8/p7/n1K5 1. ②xb4 當b2 2. 當a5 當xa1 3. 當a4 當b2 4. 單a5 单b3‡ 1. 單b7 单b3 2. 豐c4+ 當b2 3. 當b5 當a3 4. 單b6 单a4主 1.豐xd5 b5 2.堂b7 b6 3. 纪c7 bxc7 4. 堂a8 c8=豐生 Comments by Author: • Bukovina theme, • Consecutive Umnov (B-W, qPkP, 2) • Reciprocal capture (bS/wP), • Model mate  $\times$  3 5889. (H≠5, Uberto Delprato & Roberto Cassano) 6K1/5p2/7r/8/3k4/6b1/2P5/7B 1. \$\$e5\$ \$\$xf7 2. \$\$f5\$ \$\$e7 3. \$\$g6\$ \$\$e6 4. \$\$h5+\$\$f5 5. \$\$h4\$ \$\$f3\$;  $1. \textcircled{c}_{c5} c4 2. \textcircled{b}_{b6} c5 + 3. \textcircled{c}_{a7} c6 4. \textcircled{b}_{b8} c7 5. \amalg a6 c8 = \textcircled{c}_{t}$ 5890. (H≠5.5, Mirko Degenkolbe & Rolf Wiehagen) 8/8/5k2/3p4/4B3/prp5/p7/b1K5 a) 1... \$c2 2.\$e5 \$xb3 3.\$d4 \$xa2 4.\$c4 \$b1 5.\$b3 \$c1 6.\$a2 \$xd5\$ b) 1... <sup>a</sup>xd5 2. <sup>b</sup>e5 <sup>a</sup>xa2 3. <sup>b</sup>d4 <sup>a</sup>b1 4. <sup>b</sup>c4 <sup>a</sup>e4 5. <sup>b</sup>b3 <sup>a</sup>xb7 6. <sup>b</sup>a2 <sup>a</sup>d5t

Comments by Authors:

- Kniest on the SAME square (a2), in a) by wK, in b) by wB.
- In a), Rundlauf of wK in 5 moves; in b), Rundlauf by wB in 4 moves (e4-->e4) & switchback wB (d5), and Kozhakin.
- Mating move of a) = Key move of b).

• Identical model mate. • Minimal and 9 pieces. • Identical black play.

Two pieces for comparing:

P1380021 - also Kniest on the SAME square (h3), but no Rundlauf neither of wK nor of wB.

P1394232 - also Rundlauf of wK ( in 4 moves, only), and Rundlauf of wB (d2-->d2); but Kniest

on DIFFERENT squares (c5 & f4) and almost doubling the number of black pieces from 7 to 13.

#### 5891. (H≠6, Fabio Magini)

r4k2/2b2p2/8/8/8/1p6/1P6/rn5K

1. 単1a3 bxa3 2. ②c3 a4 3. ②b5 axb5 4. 單e8 b6 5. 單e7 bxc7 6. 塗e8 c8=豐;

#### 5892. (hs≠3, Mikola Vasyuchko & Mikhaïlo T. Galma)

4B2b/4p3/P3k2q/2PN1pnp/1p1P4/7p/3p2pK/6N1

a) 1. 🖹 xh5 🚊 f6 2. 🚊 e8 🖤 h4 3. 🖄 f4+ 🖤 xf4‡

b) 1.  $\textcircled{a}xb4 \ \textcircled{b}f6 2. \ \textcircled{a}d5 \ \textcircled{a}a5 3. \ \textcircled{a}c7+ \ \textcircled{a}xc7 \ddagger$ 

Switchback di 🖄 e 🏝 per liberare una linea nera ostruita. Un lavoro interessante.

#### 5893. (hs≠3.5, Jorge J. Lois)

8/3R1B2/3NN3/PP1kp1rb/K7/P7/8/8

 $1... \textcircled{g}{g}{g}{2}. \blacksquare c7 \blacksquare h5 3. \blacksquare c1 \blacksquare h4 4. \blacksquare d1 + \textcircled{g}{x}{d1}{\ddagger}$ 

Echo diagonal-orthogonal, Batteries réciproques (WinChloe)

Comments by Author: Thematic content: Dismantling a white direct battery and creation a black direct battery. [Un altro helpselfmate interessante.]

#### 5894. (hs≠3, Sébastien Luce)

a) 1.c8 = ana1 = 2.ang4 = a53.anb5 + xh5;

b) 1.c8=2n c1=2.2nd6+2nf5 3.2nh6+2xh6;

Comments by Author:

Unique example of AUW in hs#n with ABC only. Neutral Bishop or Knight of promotion comes to give a check on the "h" file and black mating move is forced by an effect of the condition. Also note in b) that 2.Sne7? is not good as black Queen on c1 would have to play the next move.

#### 5895. (H=4, Sébastien Luce)

 $1.g1=\overline{a}$   $\overline{a}xe2 2.\overline{a}e3$   $\overline{a}e4 3.\overline{a}c1$   $\overline{a}g2 4.b1=2$   $\overline{a}h1=$ 1.b1=2  $\overline{a}b2 2.e1=2$   $\overline{a}d2 3.2d3$   $\overline{a}d4 4.2c1$   $\overline{a}g1=$ 

Comments by Author:

In a "very horizontal position" two pinned stalemates on the first rank.

One with a black Grasshopper pinned on c1, the second with a black Knight on the same square. **5896.** (sh=8, L'ubos Kekely)

a) 1.a5 2.a4 3.a3 4.a2 5.a1= 2 6. 2 c2 7.LIc5 8. e3 \$ f2=

b) 1.b5 2.b4 3.b3 4.b2 5.b1=<sup>≜</sup> 6.<sup>≜</sup> c2 7.LIc4 8.<sup>≜</sup> e4 <sup>≜</sup>xg4=

Comments by Author: Tanagra. Double excelsior. Minor promotions. Analogies. Ideal stalemates. 5897. (H≠7.5. Sébastien Luce)

#### **5897. (H≠7.5, Sébastien Luce** 8/8/k7/8/8/pr6/1r6/1NK5

1...Dc3 2.a2 Dd1 3.a1=Da2 4.Da5 Dc1 5.Da4 Dxb3 6.Da3 Dc5 7.Da2 Da4 8.Db1 Dc3; Comments by Author: White Knight rundlauf and Kozhakin. Black has to promote to Bishop to avoid a move by the piece of promotion.

#### 5898. (H≠6, Sébastien Luce)

1.Se4 AIf5 2.Sg1 AIg2 3.MVRf3 AIg4 4.Sh4 AIe4 5.MVRh1 AIh3 6.Sh2 AIg2‡ 1.MVRb5 AIb4 2.MVRc3 AIb2 3.Sb1 AIb4 4.Sa4 AId4 5.MVRa1 AIa3 6.Sa2 AIb2‡

1.MVRc6 AId7 2.Se7 AIb7 3.Sa7 AId7 4.Sd8 AId5 5.MVRa8 AIc8 6.Sb8 AIb7‡

Comments by Author: Triple echo on the corners h1, a1 et a8. Despite its great power, the Multi-Vizir, incarcerated by the black Grasshoppers, is mated by the Eagle.

#### 5899. (sd=23, Sébastien Luce)

1.TSCf8 2.TSCxd7 3.TSCa7 4.TSCc7 5.TSCc1 6.TSCh1 7.TSCa8 8.TSCc6 9.TSCxa5 10.TSCxb7 11.TSCb2 12.TSCb4 13.TSCxc2 14.TSCxa1 15.TSCxb3 16.TSCh3 17.TSCxg1 18.TSCxe2 19.TSCxg3 20.TSCxh5 21.TSCh8 22.h5 23.h6=

Comments by Author: Long rundlauf with four corners theme by the shooter Grasshopper/Knight (TSC).

#### 5900. (S≠8, Ivan Bryukhanov)

3Q4/1N6/8/8/kr6/8/K7/2N5 1.豐e8+! 單b5 2.豐e4+ 單b4 3.豐c6+ 單b5 4.豐c4+ 單b4 5.堂a1 堂a3 6.豐a6+ 單a4 7.豐d3+ 堂b4+ 8.空a2+ 單xa2(空b1);

#### 5901. (H≠2, Michael McDowell)

8/8/5pK1/3R2q1/P2kp3/3pB3/8/8 1.營h5 皇h6 2.堂e3 罩g5t 1.營h6 罩h5 2.堂d5 皇g5t

#### 5902. (H≠3, Hans Nieuwhart)

8/3p4/4Np2/2p2k2/1P1r4/4P3/8/K7 1.cxb4(c5) c6 2.dxc6(d7) d8=營 3.罩xd8(營d4) 營e4‡ 1.ዿg4 ⇔xd4(罩e6) 2.罩e8 ⇔e2 3.罩xe3(營e8) 營h5‡

#### 5903. (ss≠14, L'ubos Kekely)

6b1/5p1k/p7/5PP1/1R6/n7/PKP5/B7

1.c4 2.c5 3.c6 4.c7 5.c8=₩ 6.₩xa6 7.₩xa3 8.₩d3 9.a3 10.№a2 11.¤b1 12.≜b2 13.¤a1

14. 빨b1 f6‡ Comments by Author: Meredith. Excelsior. Zugzwang.

#### 5904. (hs≠5, Sébastien Luce)

1B6/7P/2p4P/^q1Pp4/2pK4/4P3/P7/6N1

1.h8=-- 扁a1 2.h7 扁h1 3.扁c3 扁h8 4. 白f3 扁a8 5. 皇e5 扁a1;

Comments by Author: Four corners theme by black Grasshopper with a surprising promotion to white Grasshopper at the beginning. White Knight f3 avoids the escape of Grasshopper c3.

#### 5905. (hs≠2.5, Gábor Tar)

8/pNR3B1/R1p1k3/2p2q2/2P1Bp1N/6p1/1r3r2/3K1n2 a) 1...agenumber gamma gamma

I concorsi su	<b>Best Problems:</b>
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- ≠2/=2, (2023/2024): NN
- ≠3/=3, (2024-2025): Antonio Garofalo
- S≠2/3-S=2/3 (2024-2025: Antonio Garofalo
- H≠2/H=2, (2024-2025): NN

- H≠2,5/3-H=2,5/3, (2024-2025): NN
- H≠n/H=n, (2024-2025): Antonio Garofalo
- HS ≠2/3/n (Orthodox helpselfmate) 2024-2025: Antonio Garofalo
- Fairies (2024): NN

E-mail & web site: perseus@bestproblems.it http://www.bestproblems.it

# Marco Bonavoglia Memorial Tourney

Award by Thomas Brand

It was a very sad honour for me to be invited to judge this tourney: It's the second time I took over the judgement of an intended Jubelee and now a Memorial Tourney: The first one was the intended Wolfgang Dittmann 80 Tourney.

Both Wolfgang and Marco were very interested not only generally in retros, but liked the exploration of different fairy conditions in retrograde analysis: While Wolfgang since the new millennium focused on Anticirce in Proca defence retractors, in his younger years he often dealt with illegal clusters and last movers – including those based on fairy conditions. And both met a few times – at Andernach and during Wolfgang's business stay in Italy.

And I liked it very much to meet with both: Not only to discuss on problem chess and specifically retrograde analysis, but because both were very likeable dialogue partners in discussions on a wide range of topics.

So it was a great honour when tourney director Antonio Garofalo asked me to act as judge for the now rededicated memorial tournament, where the announced theme was "Last move?" problems with any fairy conditions (Fairy pieces are not allowed unless the initial game array is clrearly stated).

Antonio sent me a file with 15 contributions (frankly, I had hoped for more participants) from the following authors (\* indicates co-productions): Themis Argirakopoulos 9\*, 10\*; Allan Bell 6, 7; Dirk Borst 5; Michel Caillaud 14; Jacques Dupin 13\*; Theodoros Giakatis 9\*, 12; Maryan Kerhuel 13\*; Enzo Minerva 15; Ladislav Packa 11; Kostas Prentos 9\*, 10\*; Paul Raican 1, 2, 3, 4; Manfred Rittirsch 8.

Intensive checks – I am very grateful to Hans Gruber for his valuable support – resulted in the exclusion of a few problems:

2: (Kh8/Kb8, 12+4): anticipated by Plaksin & Kornilow feenschach 1988 (P0008680).

6: (Ke4/Kc6, 4+3): *cooked*, many other solutions like Pd5xS/Bc4.

7: (Ke1/Kg1, 4+11): *cooked*, for example a) Kd1xSe1#, b) Qe5xPf4.

9: (Kg8/Ke4, 9+2): no solution, since the intended e.p. capture recolours Pg7.

**10**: (Kg6/Kd5, 19+1) *no solution* according to our understanding of the "Masand Generalized" definition given together with 10:

See the diagram "Position before -1.Sd1-e3" (i.e. the position when exactly 1 single move is retracted - notabene, the solution move we are looking for). Then play the move forwards in the diagram: 1.Sd1-e3. After this move (obviously a check, so bQf5 and bPg4 are recoloured) the queen rebirth square is free, so all white queens check and recolour all the pieces they observe/cover, so all knights and bishops (thankfully queens don't observe each other ...) So it is ALSO true: 1.Se3+ leads to the wQd4 (which now checks) – recolouring the wSe3! So there should be a BLACK Se3 in the diagram - but there isn't!

**12**: (Ke1/Ke5, 4+2): *no solution* in b): R 1.Rc3xPh3 [wRh1]+ is illegal because the resulting pawn constellation bPh3/wPh7 is illegal in Anticirce, and the additional Circe condition does not change this.

**15**: (Kg1/Kh3, 9+1): cooked, since for a "last move" problem to be correct the last move must be completely be determined – including captures. This is not the case in b), where the black man captured might have been a Knight, a Rook, or a Queen.

The quality of the remaining problems seems me to be from "average" to "excellent", so I decided to integrate six out of the eight now to be considered problems into the award. Brief remarks on the two not included:

1: (Kd4/Ke1, 4+9): Obvious last (checking) move; the only Rex Multiplex use is to fix the white Queen – so "too orthodox" in my mind.

**4**: (Se1,Sb7, 4+2): Indeed, Co+ with 488 proof games in 14.5 (no shorter one), all ending with 15.Rg1xQd1 – but do I overlook any specific "last move?" arguing? Note, the unique last move is only forced by the "proof game time pressure", not by any retro arguments. (Compare 14)

Now let's switch to the awarded problems:



#### ← 1<sup>st</sup> Prize: 14) Michel Caillaud

r1b3k1/S2S1SpS/8/4Q3/3P2RR/sSB1S3/5K1P/1b3BSR Last move? (16+6) - Einstein

1.e4 Sa6(P) 2.e5 a5 3.e6 a4 4.exf7(S) e6 5.c4 Bd6(S) 6.c5 Se7(P) 7.c6 0-0(Bf8) 8.cxd7(S) c6 9.b4 c5 10.b5 c4 11.b6 c3 12.bxa7(S) Qb6(R) 13.Sxc3(B) Rb1(B) 14.g4 b6 15.g5 b5 16.g6 b4 17.gxh7(S) b3 18.axb3(S) e5 19.Rxa4(Q) e6 20.Qh4(R) e4 21.d4 e3 22.Bxe3(R) e5 23.Rxe5(Q) Se4(P) 24.Qg4(R) e3 25.fxe3(S) Ba3(S) 26.Ke1-f2!

«In Einstein Chess, any move of a unit except Kings and non capturing Pawns changes its nature. So that the total number of moves of a non capturing player (as is the case for Black in this problem) is limited, except for the King moves.

As Black didn't capture, there is only 1 explanation for some pieces : Dd8-b6(T)-b1(F) and Ff8a3(C) (with Ff8 either original or issued from Th8-f8(F))

Some captures by white are clear:  $a \times b3(C)$ ,  $b \times a7(C)$ ,  $c \times d7(C)$ ,  $\acute{e} \times f7(C)$ ,  $f \times \acute{e}3(C)$ ,  $g \times h7(C)$ ,  $C \times c3(F)$  and Dé5 comes from Fc1 after 2 captures  $F \times \acute{e}3(T) \times \acute{e}5(D)$  or  $F \times g5(T) \times \acute{e}5(D)$ .

The last 10th white capture accounts for Tg4,h4. Tg4 is the original Dd1 after Dg4(T), and Th4 is Ta1 after  $T \times a4(D)-h4(T)$  or  $T\acute{e}1(F) \times h4(T)$ 

Only  $T \times a4(D)-h4(T)$  accounts for capture of Cb8 captured as a Pawn on file a, c or d.

Some sequences can be ordered. The critical one is :  $c \times d7(C)$ , c7 to c3+ Db6(T),  $C \times c3(F)$ , Tb1(F),  $a \times b3(C)$ ,  $T \times a4(D)$  and at last Fa3(C) When Ff8 leaved, f8 was controled since long by Cd7.

So that black King was already in g8 (after 0-0(Ff8)). As h8 is controled by Cf7 before original Ff8 moved, black King played only one move in the game! Now as black King is restricted the exact number of black moves (25) is known with 2 variations for the original Bf8 : Ff8-c5,d6(C)-é4(P)-é3 for Fc1×é3(T)×é5(D) or Ff8-é7(C)-g6(P)-g5 for Fc1×g5(T)×é5(D)

At the same time, minimal number of white moves can be determined to 26, so white played the last move, and the retroplay is under pressure as white has to make black moves available. The try  $F \times g5(T) \times 65(D)$  fails :

26.Tg5×Pé5(D) 25.Ff8-a3(C) Ré1-f2 24.é6-é5 f2×é3(C) 23.é4-é3 Fç1×Pg5(T) 22.g5-g6 d2-d4 21.Cé7-g6(P) Dd1-g4(T) 20.é5-é4 Da4-h4(T) 19.???

So the last move is 26.Ré1-f2!!

It happens that time pressure makes all the moves determined until the initial position!! So that the stipulation could also be "Last 25,5 moves?" as well as "Proofgame in 25,5 moves" or simply "Proofgame?" as move number is superfluous.» Comment by Author.

With use of only one (of course well-chosen) fairy condition the author manages to create a truly "retro without words": You may start with the initial game array and try to play to the diagram position, you will notice that this game is unique with 25.5 moves – or you might retract from the diagram, and you will reach the initial game array just 25.5 moves before with a unique retraction order. The technical clue is that the black King has only moved once (castling); the Knights on d7, f7, and h7 are not only there so that White has many moves and thus the order of White and Black is determined, but also and very importantly so that the black King is immobilised -- because the Einstein condition rule says that kings and non-capturing pawns would ruin everything. (And of course White has 16 pieces as a basic prerequisite for Black never being able to benefit from the Einstein capture upgrade).

Clearly number one in this tourney!



← 2<sup>nd</sup> Prize: 5) Dirk Borst

Last move? (13+7) 5Rn1/2pp4/p1r1P3/6p1/2P5/3P4/PPkPBP2/RN3RK1Zeroposition: a) +as b) +abs c)  $ag5 \rightarrow h5$ Monochromatic Solutions: a) 0-0 b)  $ag7x\Xif8=\Xi$ c) af5xe6 e.p. Valladao.

«In all three, Black has no legal last move, so White made the last move in each. White's retraction must enable Black to retract a legal move.

In a) not gxTf8=T? because wTf8 captured Sb8. After f5xe6 e.p.? the bD cannot get back home. In b) not 0-0? because the wK captured the a-pawn. After f5xe6 e.p.? the bD cannot get back home. In c) not gxTf8=T? because wTf8 captured Sb8. Not 0-0? because the wK captured the a-pawn.» Comment by Author.

Using Monochromatic specifics the author manages to make two of three possible last moves "all being" special moves" forming the Valladao task– cyclically illegal in the three positions.

Even the fact that Black has no last move, so White must start the retraction is motivated by the fairy condition used. It was much fun to figure out the detailed intelligent reasoning for the uniqueness of last move in the three positions – but the Zeroposition with quite unbalanced twinning is a drawback.

Sometimes it's not so easy to see that a Monochromatic position is legal, so the authors added three proof games to demonstrate legality.



#### ← 1<sup>st</sup> Hon. Mention: 8) Manfred Rittirsch

Last move? - (14+3) 5n2/2PPP3/3R4/PPk5/p2P4/2P1P3/2K5/1N1NBB2b)  $\Xi d6 \rightarrow d2$  c)  $\Xi d6 \rightarrow b4$  d)  $\Xi d6 \rightarrow f4$  Sentinelles a) 1.Rd4xSd6[+wPd4] (Sc,e8-d6) b) 1.Rd4xBd2[+wPd4] (Bc1-d2) c) 1.Rd4xRb4[+wPd4] (Ra4-b4[+bPa4]) d) 1.Rd4xPf4[+wPd4] (e,f,g(x)f4) «Large rook cross. 4 different types of uncaptured pieces.» Comment by Author Well-linked four solutions (uncapture of different black men o the same square by the "thematic" rook) with optimal "geometric" twinning. And it's fun to figure out why other uncaptures don't work. Very elegant, but of course not as deep as the Prize-winners.



← 2<sup>nd</sup> Hon. Mention: 13) Maryan Kerhuel and Jacques Dupin Last move? - (3+4) b) \overline c7→c5 Make & Take 8/2R2K2/4p3/4p3/4p1B1/8/3k4/8 Double checks by White's rook and bishop.
a)
-1.Bd4×Xg4 illegal (black king in check)
-1.Bd5×Xg4 impossible
-1.Bd6×Ng4++!
b)
-1.Re3×Xc5 illegal (black king in check)
-1.Rf4×Nc5++!

The question is "how to retract the double check via Rd7 (Rd5) and Bf4?" This is done by uncapturing a Knight (not so surprising due to the e-wall). As to be expected the doublecheck move is performed by the Bishop in one solution and in the other one by the Rook. Fine twinning, as you might ask "what does it change?"



#### ← Commendation: 3) Paul Raican

Last move? - (12+10) 8/4p1p1/8/8/5P1P/PppPPkr/1PPbr1R1/q1Bb1RK1 Madrasi Vertical Cylinder

«Sol: White King is in check from bQa1, then: -1.Qa2-a1+! (-1.Qa2xSa1? or a2-a1=Q? are both illegal, too many white captures) O-O-O-O! Extended castling, specific for vertical Cylinder (wK is now in e1 and wR in a1).

Thematic try:

-1 ... O-O-O? and the cage South cannot be released.

-2.Kh2-g3! Now, a possible retro-play is the following:

-2 ...Rg5-g2 -3.a4xBb3! Re5-g5 -4.Rg2-e2. The **cage South** is released by: Rg2>a8, Rh3>h8, Bd1>c8, Qa2>d7>d8, Pa4>a7, Kh2>e8, e2>e3, Re5>h1, Be3xQd2, Be3>g1, d4xSc3, **g2-g1=B!** (bB is promoted because the Pawns e7-g7 are both at home) g3-g2, Pd4>d7, Bb3>f1, g2xSf3>b8, g4-g3, h5xSg4, bBf8 was captured from f8 by a Knight» Comment by Author

The answer to the question "What was the last move?" is extremely obvious, while the main topic of this problem is the penultimate move, the very specific and quite spectacular castling. The subsequent retraction is more or less purely (Madrasi-) technical.



← Commendation: 11) Ladislav Packa Last move? - (1+4)6r1/5n2/8/4q1K1/8/8/k7Zeroposition a) -  $extsf{e}$  5 b) - arrow f7 c) -  $extsf{e}$  g8 Anticirce a) - Qe5 1.Sh8-f7+ 1.Rb8-g8+ b) - Sf7 1.Rd8-g8+, 1.Qh8-e5+ c) - Rg8 1.Qb8-e5+, 1.Sd8-f7+ Black officers cycle. Cycle of departing squares.

Here the Zeroposition does not disturb: Removing one of the three black men results in a double check position which is resolved by mutual blocking of the Anticirce rebirth square automatically resulting in a cycle of departing squares. Very elegant, very easy to solve, an ideal Anticirce retro merchandizing problem.

Bornheim (Germany), December 2023

**Thomas Brand** International Judge of the FIDE

I miei più sinceri ringraziamenti a Thomas Brand per il suo qualificato verdetto, il quale diverrà definitivo passati 3 mesi dalla pubblicazione. Eventuali reclami vanno inviati al Direttore del Concorso: Antonio Garofalo, E-mail: perseus@bestproblems.it

[My most sincere thanks to Thomas Brand for his qualified award, which will become definitive 3 months after publication. Possible claims must be sent to the Director of the Competition: Antonio Garofalo, E-mail: perseus@bestproblems.it.]

NUTS (48) di Mr. Veneziano mr.veneziano@yahoo.com

### Esame d'ammissione

Dal 1° marzo di quest'anno la FIDE ha apportato alcuni correttivi al rating per calcolare la forza dei giocatori, il noto sistema Elo, dal nome del fisico statunitense di origine ungherese che lo ideò. La novità più consistente è l'innalzamento della soglia minima da 1000 a 1400 punti e il conseguente incremento per tutti i giocatori sotto l'indice 2000 attraverso la formula:

#### **2000 - rating x 0.4 = incremento.**

Ad un presente iper-digitalizzato, caratterizzato da cavillose misurazioni in centesimi e millesimi, si contrappone un passato sicuramente più dozzinale, avvolto tuttavia da un allettante afflato romantico.

"In Unione Sovietica avevamo due corsi differenziati di due ore a settimana sulla teoria - ricorda il GM Iosif Dorfman - e alla Domenica si giocavano tornei chiusi con 10 o 12 giocatori, separati per ogni categoria. Gli open non esistevano. Dovevi fare una prima norma e poi una seconda per passare alla categoria successiva, da quella principianti, alla 5ª, via via su fino alla 1ª categoria, che oggi varrebbe circa 2000 punti Elo. Potevi poi ambire al titolo di Candidato Maestro (circa 2200 odierni) e poi a Maestro (2400 o più)". Questa era la cosiddetta piramide sovietica che ogni ambizioso scacchista si proponeva di scalare! Una storiella che girava nei circoli scacchistici fino a qualche anno fa, raccontava che ogni alunno della scuola sovietica dovesse dimostrare di conoscere l'esatta risposta al quesito in diagramma, prima di poter accedere al torneo per principianti, una sorta di esame d'ammissione...



Può il Bianco, senza muovere il \$\overline{6}c6, dare matto al \$\overline{6}\$ del Nero? [ Can White, without moving the \$\overline{6}c6, give checkmate to the Black king? ]

Invitiamo i gentili lettori a sottoporsi all'esame, rinviandoli al prossimo numero di *Best Problems* per la soluzione!

Mr. Veneziano

## Affermazioni italiane (Italian award winners)



← Marco Guida - Prize, G. Mosiashvili-75 JT, Kudesnik 2023
2V5/1j4s1/1P1PJ3/1S1kpP2/2JP4/K4PS1/1V1pj3/3s1D2
≠2 (13+7) C+
1...é> 2.œc6‡ A but 1...é∆xd4! a
1...es~ 2.Ce3‡ B but 1...exd4! b
1...é∆x2 (Cc7‡ C) but 1...é∆xd4 a, exd4 b!
1...é∆xd4 a 2.Cc7‡ C 1...é∆a5 2.≣c5‡ 1...é∆d8 2.≣c5‡ but 1...éa4!
1...é∆xd4 a 2.Cc7‡ C 1...é∆a5 2.≣c5‡ 1...é∆d8 2.≣c5‡ but 1...éa4!
1...é∆c? [2.∞∂a‡] B 1...exd4 b 2.∞C7‡ C 1...éh6!
1...é∆c2! [2.∞∂c‡] C 1...é∆xd4 a 2.œc6‡ A 1...exd4 b 2.∞∂e3‡ B

#### Thematic Highlights

- 2x Le Grand (Try2-Solution: AaC-CaA; Try3-Solution: BbC-CbB)
- 2x Dombrovskis, Inverted Form (Setplay-Solution: Aa!/Bb!- aA/bB)
- 2x Dombrovskis using double-refutation (Try1-Try2-Try3: Ca!b!-aC-bC)
- Rukhlis distributed across 4 phases (Setplay-Try2-Try3-Solution)
  - 2x Transfer of Mate (A/B): Setplay (x/y-A/B); Solution (a/b-A/B)
  - 2x Change of Mate over three phases re. defenses a/b: Try2 (a-C), Try3 (b-C);

#### Solution (a/b-A/B)

- 2x Kharkov theme (Try1-Try2-Solution: a!- aC- aA; Try1-Try3-Solution: b!-bC-bB).
- NOTE: Bpd2 added to avoid a spurious Try that would make the mechanism less precise and content less clear (partial duplication of Try1, with the same threat but only one refutation: 1.  $\frac{1}{2}$ xd1? (2.2c7 (C)#), 2xd4 (a)!)



← Marco Guida - Prize G. Mosiashvili-75 JT, Kudesnik 2023 3V4/5K2/1SpJPJ2/1P1Pkp1p/1s2P3/5pPP/1dvV3D/1S6 ≠2 (14+8) C+ 1.≜c7? C [2.Åc4 A, Åd7≠ B] 1...≜xd2 a 2.Åxf5≠ D 1...≜xd6 2.≜xd6≠ but 1...≣xd2! b 1.≜e3? [2.≜f4≠] 1 ...≣xd2 b 2.Åc4≠ A but 1...≜xd2! a 1.Åxf5! D [2.g4≠ (NOT 2.Åd7? B] 1...≜xd2 a 2.≜c7≠ C 1...≣xd2 b 2.Åd7≠ B

#### **Thematic Highlights:**

- 2x Dombrovskis (Try 1: Ab Try 2: bA; Try 1: Bb; Solution: bB))
- Key-Mate Reversal (Try 1: CaD; Solution: DaC)
- Pseudo-Erokhin (Try1: BaD; Solution: DbB)

• Threat Correction in Solution (a generic move of 2d6 would make apparently possible 2.2d7 B, but this will not be possible since it will remove control on square e4; the key corrects by introducing a new threat). The non-threatened mate returns as variation mate in Solution.

• It is interesting to see that thematic defences in the Tries defend indirectly by eliminating the control of Rd2 on square d4, while in the Solution they defend directly against the threat.

- Interchange of defences and refutations (Try 1: ab!; Try 2: ba!)
- 2x Change of mates after thematic defences



← Marco Guida -  $3^{rd}$  Prize, Mario Guido Garcia 75JT, 2023 33yj2/5DVj/1ppkJpJ1/1pp1s3/2P5/4SPv1/6p1/4V1K1  $\neq 2$  (9+13) C+ 1...&f4 a 2.&xf4≠ A,  $\Xi$ d1≠ B 1..&f4? A [2. $\Xi$ d1≠ B] 1...&xf4 a 2.&c7≠ C 1...&xf4 a 2.&c7≠ C] 1...&xf4 a 2.&xf4≠ A (NOT 2. $\Xi$ d1? B) 1... $\Xi$ c8/ $\Xi$ e7 2. $\boxtimes$ (x)e7≠ 1... $\bigotimes$ d7/ $\bigotimes$ xe6 2. $\boxtimes$ (x)d7≠ but 1... $\Xi$ xg7! 1. $\bigotimes$ d7/ $\bigotimes$ xe6 2. $\boxtimes$ (x)d7≠ Dut 1... $\Xi$ xg7! 1. $\bigotimes$ cf4! [2. $\boxtimes$ c7≠ C] 1...&xf4 a 2. $\Xi$ d1≠ B (NOT 2.&xf4? A) 1... $\Xi$ c8/ $\Xi$ e7 2. $\boxtimes$ (x)e7≠ 1... $\bigotimes$ d7/ $\bigotimes$ e6 2. $\boxtimes$ (x)d7≠

#### Thematic Highlights:

- Makihovi
- Dyatchuk combination: Erokhin (Try1-Try2: AaC-CaA) + Le Grand (Try1-Solution: BaC-CaB)
- Dual-avoidance
- All Keys on the same square
- All refutations by the same \[2]g3



← Marco Guida - 1<sup>st</sup> Prize, *The Macedonian Problemist League* 2023 1K1R4/2p1N2r/2Bpp3/2ppRP2/b1Pk1P2/5P1n/1N1B1b2/2r1nQ2  $\neq 2$  (12+12) C+ 1.  $\forall xd5?$  [2. $\exists e4 \neq$ ] 1...exd5 2. $\exists xd5 \neq$  1...& c2 b 2. $\& c3 \neq$  B 1...exd5 2. $\exists xd5 \neq$  1...& g5 2. $\forall xf2 \neq$  1...& xf3 2. $\forall d3 \neq$  but 1...exf5!1.cxd5? [2. $\exists e4 \neq$ ] 1...dxe5 a 2. $dxe6 \neq$  C 1...& c2 b 2. $\forall c4 \neq$  D 1...exf5 2. $\& xf5 \neq$ 1...exd5 2. $\exists xd5 \neq$  1...& g5 2. $\forall xf2 \neq$  1...& xf3 2. $\forall d3 \neq$  but 1...exf5!1.exd5 2. $\exists xd5 \neq$  1...& g5 2. $\forall xf2 \neq$  1...& xf3 2. $\forall d3 \neq$  but 1...exf51...exd5 2. $\exists xd5 \neq$  1...& g5 2. $\forall xf2 \neq$  1...& xf3 2. $\forall d3 \neq$  but 1...exf11.& xd5! [2. $\exists e4 \neq$ ] 1...dxe5 a 2. $\& c6 \neq$  E 1...& c2 b 2. $\& c6 \neq$  F 1...exf5 2. $\bigotimes xf5 \neq$  1...exd5 2. $\exists xd5 \neq$  1... $\bigotimes g5$  2. $\forall xf2 \neq$ 

#### Thematic Highlights

• Zagoruiko 3x2 with 3 Masked Battery variations.

• A novelty, whereby all three thematic mates following 1...dxe5 (a) are masked battery mates. Usually in Zagoruiko with masked battery mates the pattern is Set/Try/Solution, with, e.g., the set mate after 1...dxe5 (a) would be 2. and only 2 thematic mates are masked battery mates (respectively in Try and Solution).



← Marco Guida - 2<sup>nd</sup> Prize, *The Macedonian Problemist League* 2023 1R1N4/1qpQ3K/b2p4/2pP4/p1k5/b3P3/2P1N1B1/4B3  $\neq$ 2 (10+8) C+ 1. $\triangle$ f4? B [2.&f1≠ A] 1...imesxd5 x 2.&xd5≠ but 1...imesb3! y 1. $\triangle$ c3? C [2.imesg4≠, NOT 2.&f1≠ A] 1...imesc8 z 2.&f1≠ A 1...imeskd5 x 2.&xd5≠ (NOT 2.&f1? A) 1...imesb4 2.imesxa4≠ but 1...c6! 1.&f1! A [2. $\triangle$ f4≠ B] 1...imesb3 y 2. $\triangle$ c3≠ C 1...imesxd5 z 2.imesc6≠

#### Thematic Highlights

• "Extended" Urania, **is a Novelty**: the same white move &fl (A) acts not only as <u>Key</u> (Solution), <u>Threat</u> (Try1) and <u>Mate</u> (Try2), but also as:

• <u>Non-Threat (dual-threat avoidance)</u> in Try2: the Key controls d5 and opens the line for &g2, therefore in principle allowing 2.&f1 (A), but it also closes the line of &e1 giving a flight to b4 to black King;

• <u>Non-Mate (dual avoidance)</u>: the defence 1...  $\forall xd5$  (x) open the line of  $\exists b8$  to square b4, therefore in principle allowing  $2.\&fl \neq (A)$ , but at the same time it controls the mating line.

- Key-Threat Reversal (Try1-Solution) ; Pseudo-Salazar (Try2- Sol.: CzA-AyC)
- White Correction and Threat Correction,
- Battery Play in Solution across the threat and 2 variation mates
- Change of Mate after 1... <sup>w</sup>xd5 (x)
- Flight-giving keys in Try2 and Solution, with different mates after King's flight



#### ← Valerio Agostini & Antonio Garofalo

Commendation, Variantim 2021 8/8/3p2k1/pR1P3K/5Bp1/2n1n1P1/2r5/6b1  $H\neq 2$  (5+8) C+ - Ultra Patrol, (Ultra-Patrouille)  $1. \textcircled{O}exd5 \triangleq e5 2. \textcircled{O}c7 (\textcircled{O}b6?) \triangleq xc3\ddagger$   $1. \textcircled{O}exd5 \triangleq g5 2. \textcircled{O}b6 (\textcircled{O}c7?) \triangleq xe3\ddagger$ [Ultra-Patrol Chess: A piece can move, capture or give check only if it is observed by a piece of its own side.]

The activation of the white king as a mate piece requires the opening of the white rook line. This demands precise interplay between the black knights and the white bishop. (Judge Sven Trommler)



← Daniele Gatti - Special Hon. Mention, Chess Study Art (2023)
5k1K/3p1p2/3P4/3P4/8/pp6/2r4N/R7
Draw = (5+6)
[English notation]
Try: 1. Sf3?
but 1. ... a2! 2. Rg1 Rg2! 3. Rxg2 a1=Q+ [-+]
Solution:
The rooks are going to the g-file soon that's why the knight should close it. 1. Sg4!

#### First Main Line

1...Rc3 2. Sf6 Rh3+ 3. Sh7+ Rxh7+ 4. Kxh7 b2 5. Rg1 (5. Rb1? Ke8! 6. Kg7 Kd8! 7. Kxf7 Kc8! 8. Ke7 a2! 9. Rxb2 a1=Q)

With two variations:

The f-pawn is **a** switch between two draws: 5. ... f5 6. Kg6 (6. Rg8+? Kf7 7. Rg7 Kf6 8. Rg6+ Ke5 [-+]) a2 7. Rh1 Kg8 8. Re1 Kf8 9. Rh1 Kg8 10. Re1 (= repetition of position)

5. ... f6 6. Rg8+ (6. Kg6? a2! 7. Rh1 b1=Q+ [-+]) Kf7 7. Rg7+ Ke8 8. Rg8+ Kf7 9. Rg7+ Ke8 10. Rg8+ (= perpetual check)

#### Second Main Line

1. ... a2 2. Rg1! Rg2 (now the white rook can leave the g-file) 3. Rc1 Rc2 4. Rg1 Rg2 5. Rc1 f5 6. Sh6 Rg8+ 7. Kh7 Rg7+ 8. Kh8 Rg8+ 9. Kh7 Rg7+ perpetual check to the white king. (Author) *Each main line has two positional draws. They all are simple but the construction is great, each pawn is involved. Maybe that's the reason why at some moments I like this study more, but then I look at the draws and I like it less. This explains its special distinction. (Judge: Serhiy Didukh)* 



← Daniele Gatti - 4<sup>th</sup> Hon. Mention, Unto Heinonen MT 2023. 3B3N/8/8/7k/8/pPpPpP2/P1P1P3/Knr1Rn2 sd≠7 (10+7) C+ Anticirce 1. \[\overline{\overlin}\overline{\overline{\overline{\overline{\over Second Try: 5.Kb1 6.Rxf1 (> h1)+? ... but Kg6!! [Refutes], White Kings occupies the Knight rebirth square!

Third Try: 5.Kb1 6.Ka1 7.Rxf1 (> h1)+? ... but Kh6!!! [Refutes], White Kings occupies the Rook rebirth square!

6. Kd1! White Kings occupies the Queen rebirth square, but the Queen is missing from the board, so it's the only safe place. And now is possible:  $7.Rxf1 (>h1)\neq$ "

• Comment by Judge Hans Gruber: «After a funny (and violent) introduction in which king and rook switch places so that White can castle, a critical position is created. White intends to mate by Rxf1 [Rh1] but has to take care that the white king does not block a rebirth square of a white piece such that the black king is granted a flight. The only safe place is the queen's rebirth square d1, as the thematic tries show: 5.Rxf1 [Rh1]+? Kg5! (block of the bishop's rebirth square), 5.Kb1? 6.Rxf1 [Rh1]+? Kg6! (block of the knight's rebirth square), 5.Kb1? 6.Ka1 7.Rxf1 [Rh1]+? Kh6! (block of the rook's rebirth square). An excellent idea, but the construction with so many pawns is clumsy. The problem is sound both with the Calvet and the Cheylan type of Anticirce.»



← Daniele Gatti, Mario Parrinello, Marco Guida, Francesco Simoni - Commendation, Csak-Majoros-Pasztor 2023

Similar - Commendation, Csak-Majoros-Fas2ior 2023 8/Q7/4B2R/3Np1B1/4k1n1/3pPp2/2P1P1p1/3N2Kb  $S \neq 7$  (10+7) C+ (Tested with Gustav 4.2a with Brute Force) Comment by Authors: "*Try:* 1.*Sf2*+? but 1...*Sxf2*! 2.exd3+ *Sxd3*  3.Qa4+Sb4 and not possible Queen sacrifice in d5. Solution: 1.*Sf*6+! 1...*Sxf*6 2.Qb7+ (2.Qa8+? Sd5 3.Qa4+Sb4 4.exd3+ Knight is pinned) 2...*Sd5* 3.Qb4+ *Sxb4* 4.exd3+ (4.cxd3+? *Sxd3*  5.Sf2+Sxf2 6.*Rh*4+ *Sg4* 7.*Bh*6 *fxe2*! And no mate) 4...*Sxd3* 5.*Sf*2+ *Sxf2* 6.*Rh*4+ *Sg4* 7.*Bh*6 *fzugzwang*] ... *f2*≠"



← Francesco Simoni - 1<sup>st</sup> Commendation, 7° FRME 2021 1q6/b7/2K2n1r/2nBN3/4P1PB/3P1P2/2r2Nk1/7R  $H \neq 2$  (10+7) C+

- 1. ②xd3+ 单c4 2. ②c5 单f1:
- $1.42 \times 24 + 2662.42 \times 162 \times 164$
- 1. 2 fxe4+ 2 g6 (2 c4?) 2. 2 d6 2 f4:
- 1. ②cxe4+ ②c4 (②g6?) 2. ②c5 ②e3‡
- Battery check (B1) x 4
- Annihilation (B1) x 4
- Direct white self-pin (W1) x 4
- Reciprocal Dual Avoidance for check (W1)
- Indirect white unpin (B2) x 4
- Bi-valve (bS-wB-bR) x 4
- Switchback (bS) x 3
- Exchange of functions (wSe5/wBd5, Passive guard / Mate) x 2.

Comment by Author: "Annichilazioni di pedoni bianchi per aprire le linee dell'Alfiere, che matta o controlla una casa, liberando da quel compito un altro pezzo bianco. Il giudice ha considerato un difetto l'assenza dello Swichback nella sol. 1. Díxe4. In realtà si era voluto che il cavallo nero giocasse in una casa differente."



#### ← Francesco Simoni - 1<sup>st</sup> Comendation e.a. 7° FRME 2021 8/8/3k4/2pnp3/3N1p2/K2N1r1b/5r2/3B1q2 H $\neq$ 3 (4+9) C+

1. Ie3 2g4 (2a4?) 2. Iee2 2b4 3. 2e7 2b5:

1. <sup>□</sup>g3 <sup>1</sup>a4 (<sup>1</sup>g4?) 2. <sup>□</sup>g4 <sup>1</sup>axf4 3. <sup>1</sup>ac7 <sup>1</sup>af5‡

Comment by Author: "Schiodatura diretta bianca preceduta dal movimento del pezzo nero inchiodante sulla linea di inchiodatura. La mossa di schiodatura è precisata da un'interferenza nera. Antiduale per interferenza bianca."

«A pinning unit moves in B1 along the pin line, so that it can abandon the line in B2 to direct unpin. B2 is specified by the need to interfere a black piece. W1 guards two cross flights, with reciprocal dual avoidance for white interference in mates. The unpinned unit moves in W2 to guard the other two cross flights. Model mates.» (Comment by Judge Christopher Jones)

← Francesco Simoni - 1<sup>st</sup> Comendation e.a. 7° FRME 2021 2NB4/r3p3/1p2p2K/n2k2N1/4p3/8/prp5/1qb5  $H\neq3$  (4+12) C+

1. <sup>a</sup>d2 <sup>a</sup>xe7 (<sup>a</sup>xb6?) 2. <sup>a</sup>b4 <sup>b</sup>f3 3. <sup>b</sup>c6 <sup>b</sup>xb6<sup>+</sup>

1.  $\pounds f4 \triangleq xb6 (\triangleq xe7?) 2. \pounds c7 \square f7 3. \square c4 \square xe7$ ;

Comment by Author: "Schiodatura diretta bianca preceduta dal movimento del pezzo nero inchiodante sulla linea di inchiodatura. La mossa di schiodatura è precisata da un'interferenza nera. Antiduale per occupazione preventiva di una delle due case a disposizione del pezzo mattante."

«A pinning unit moves in B1 along the pin line, so that it can abandon the line in B2 to direct unpin. B2 is specified by the need to interfere a black piece. W1 guards two cross flights, with reciprocal dual avoidance for the block of the mating squares. The unpinned unit moves in W2 to guard the other two cross flights. Model mates.» (Comment by Judge Christopher Jones)



 $1...b1 = \textcircled{2} 2. \textcircled{4} xn / \textcircled{4} b5 3. \textcircled{4} n6 \textcircled{4} xd5 4. \textcircled{4} g6 + \textcircled{4} g5 \ddagger 1...b1 = \textcircled{2} 2. \textcircled{4} f8 \textcircled{2} c3 3. \ddddot{4} xf6 \textcircled{2} xd5 4. \ddddot{6} f4 + \textcircled{2} xf4 \ddagger t4$ 

The underpromoted black piece moves to d5 to allow battery mate. (Judge Sven Trommler)

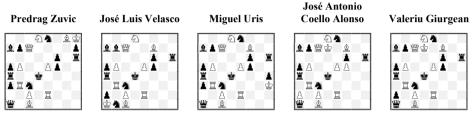




## Ricostruzione



← György Bakcsi - Ricostruzione 98, BP109
1<sup>st</sup> Prize - T.T. Fédération Hongroise des Echecs 1970
3Nn3/bpQ2B2/5pr1/pP2P2/r2k2p1/1Rn5/p1P1R1K1/q1B5
≠2 (10+13) C+ [Winchloe ID 901095]
1... ②xb5 2. □d3; 1... □c4 2. □xc4; 1...fxe5 2. □xe5;
1... ③xb5 2. □xa7;]
1... ②xb5 2. □xa7;]
1... ②xb5 2. □xa7;
1... ②xb5 2. □xa5; 1... □c4 2. □e6; 1...fxe5 2. □e3;
1... ②xb5 2. □xa5; 1... □c4 2. □e6; 1...fxe5 2. □e3;
1... ②xb5 2. □xa5; 1... □c4 2. □e(x)d6;
1... ②xb5 2. □xa5; 1... □c4 2. □(x)d5; 1... ○d5 2. □(x)d5;



Benvenuti (welcome) a José Luis Velasco per la sua prima partecipazione a questa rubrica e bentornato invece (welcome back) a Valeriu Giurgean. Le ricostruzioni sono tutte buone. C'è una curiosità: nei primi 4 diagrammi il 🖄 bianco è stato posto in 4 case diverse, h8, a1, h3, d7; solo Valeriu ha ripetuto la casa d7. Ciò ha comportato una diversa quantità di pezzi, rispettivamente: 10+13, 10+11, 10+13, 12+10, 10+12. Quindi il più "bravo" in economia è stato il nuovo arrivo, José Luis. Però questo gli è costato una chiave di cattura di un 🎗 nero. Egli ha anche risparmiato la 📽 a1 nera. Ma sembra che non si possa fare a meno di questa Regina.

**Ricostruzione n. 99 -** Ricostruire un problema  $\neq 2$  che abbia la seguente soluzione:

 $\begin{array}{l} 1. @d7! \ [2. @h7$] \\ 1... @d2 \ 2. @c3$ 1... @d4 \ 2. @c1$ 1... @c5 \ 2. @xd6$ 1... @xc6 \ 2. @xc6$ \\ 1... @d4 \ 2. @f4$ 1... e5 \ 2. @d5$ 1... hxg2+ 2. @xg2$ \\ \end{array}$ 

Inviare (send to): perseus@bestproblems.it (last available day for to send: 10/06/2024)

#### A. Garofalo

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#### Knight tour on 110 cell board

by Awani Kumar, Lucknow, India

*Best Problems* has come out with its  $110^{\text{th}}$  issue and let's celebrate and commemorate this glorious achievement with interesting knight tours on 10x11 and 2x5x11 (=110) cell board. Figure 1 and Figure 2 are semi magic knight tours on 10x11 board. Sum of all the columns is 555. The two figures are almost identical – only the four digits, namely, 46, 47, 80 and 81 interchange places. Such 'twin tours' are very rare. Figure 3 has the numbers in multiples of 11 along the central row. Figure 4 has the consecutive square numbers  $1^2$ ,  $2^2$ ,  $3^2...10^2$ , that is, 1, 4, 9... 100 along the central row. Figure 5 and Figure 6 have the consecutive square numbers along wazir and knight paths respectively.

			-			-	-		1			_			_		_					_	-
97	16	93	12	91	10	101	8	1	108	105	642	97	16	93	12	91	10	101	8	1	108	105	642
94	13	96	19	100	21	90	109	106	7	4	659	94	13	96	19	100	21	90	109	106	7	4	659
17	98	15	92	11	102	9	2	5	104	107	562	17	98	15	92	11	102	9	2	5	104	107	562
14	95	18	99	20	89	22	103		3	6	579	14	95	18	99	20	89	22	103		3	6	579
33	84	75	86	31	24	73	88	67	58	69	688	33	84	75	86	31	24	73	88	67	58	69	688
76	29	32	25	74	87	66	23	70	41	56	579	76	29	32	25	74	87	66	23	70	41	56	579
83	34	85	30	65	72	49	40	57	68	59	642	83	34	85	30	65	72	49	40	57	68	59	642
28	77	26	<u>47</u>	<u>80</u>	39	62	71	42	55	52	579	28	77	26	<u>81</u>	<u>46</u>	39	62	71	42	55	52	579
35	82	79	64	37	48	45	50	53	60	43	596	35	82	79	64	37	48	45	50	53	60	43	596
78	27	36	<u>81</u>	<u>46</u>	63	38	61	44	51	54	579	78	27	36	<u>47</u>	<u>80</u>	63	38	61	44	51	54	579
555	555	555	555	555	555	555	555	555	555	555		555	555	555	555	555	555	555	555	555	555	555	
1.												2.											
36	17	1	4 1	.05	58	103	96	10	7 9	4	91	40	19	2	2	45	110	43	10	8 10	3 3	70	73
13	20	3	7	18	15	106	59	92	9	7	108	21	6	3	9	42	67	46	69	7	2	77	102
38	35	1	6 !	57	104	41	102	95	9	0	93	18	41	. 2	0	23	44	109	104	4 10	)7 7	74	71
21	12	1	9 4	40	43	64	89	60	10	9	98	5	38	3 7	7	66	105	68	47	7	6 1	01	78
34	39	5	6 (	65	76	101	42	63	7	8	61	8	17	2	4	37	48	65	10	57	9 8	38	75
11	22	3	3 4	44	55	66	77	88	9	9	110	1	4	9		16	25	36	49	_			100
32	45	2	4 4	47	68	75	100	79	6	2	87	10	15	2	-	3	50	63	80	-	_	92	89
23	10	6		54	25	48	67	74			80	27	2			62	35	86	93			99	82
28	31		-	7	70	51	72	81			83	14	11			29	52	61	98			94	91
9	6	2		, 26	53	4	49	84			2	31	28			23 34	85	54	59			33	56
-																							
30	27	<u>۲</u>	3	5	50	71	52	3	8	2	85	12	33	3	0	53	60	97	84	5	5 :	58	95
3.												4.											
32	23	9	4	27	30	21	96	11	. 6	5	19	20	11	. 6	5	27	22	39	46	4	3 9	94	41
93	28	3	1	22	95	2	5	20	9	7	12	7	28	3 2	1	38	5	50	93	4	0 4	47	44
38	33	2	4	29	26	15	10	3	1	8	7	12	19	) 1	0	51	26	23	48	4	5 4	42	95
51	92	3	7 4	40	1	4	17	8	1	3	98	29	8	3	7	24	49	4	99	9	2 1	.07	110
34	39	5	0	25	16	9	14	99	10	6	103	18	13	5	2	9	100	25	10	8 3	3 9	96	91
91	52	4	1	36	81	100	105	10	2 7	7	72	53	30	) 1	7	36	1	64	79	9	8 1	.09	106
42	35	8	0	49	64	83	78	73	10	94 :	107	14	73	5	8	81	16	101	2	6	5 9	90	97
53	90	6	3	82	79	68	101	10	8 7	1	76	31	54	1	5	74	35	80	63	7	8 1	.05	86
46	43	4	8 8	87	84	65	74	69	5	8	109	72	59	8	2	57	62	75	10	2 8	7 (	66	89
89	54	4	5 (	62	67	56	85	60	7	5	70	55	32	6	1	70	83	34	77	6	8 8	85	104
44	47	8	8 !	55	86	61	66	57	11	.0	59	60	71	. 5	6	33	76	69	84	10	03 8	88	67
5.												6.											
2.												5.											

Figure 7 has the square numbers in wazir circuit. Figure 8 to Figure 10 have the square numbers in knight, giraffe  $\{1,4\}$  and penguin  $\{1,6\}$  path respectively. Figure 11 to Figure 15 have the square numbers in zigzag path of knight, zebra  $\{2,3\}$ , antelope  $\{3,4\}$ ,  $\{3,6\}$ -leaper and rector  $\{4,5\}$  respectively. Figure 16 to Figure 18 is closed tour with the square numbers in zebra, giraffe and korsar  $\{2,5\}$  circuit respectively.

									_						_		-	_											
28	7	14	21	30	39	52	23	32	41	31	28	21	52	55				57	86	32	27	30	51	96	79	88	83	94	77
13	20	29	8	15	22	31	40	53	56	20	53	32	29	22				90	47	29	52	33	26	89	84	95	78	87	82
6	27	12	3	38	51	24	55	42	33	27	30	51	54	33				85	58	10	31	28	53	50	97	80	85	76	93
19	88	5	26	9		37	62	57	54	8	19	26	43	50				48	91	1	54	2	34	25	90	49	110	81	86
86	11	2	17	4	25	50	59	34	43	1	42	<u> </u>	18	25				81	72	8	11	/24	55	58	61	98	75	$I \rightarrow$	109
89	18	87	10	-1	36	63	72	61	58	10	7/	2				80		60	65	23	2/	57	60	35	48		108	63	74
94	85	90	105	100	49	60	35	44	71	41	¥	95	16	79	36	93	64	73	100	12	7/	22	\3/	56	59/	62	99/	106	65
91	106	93	110	81	64	101	70	73	66	110	11	6	3	94	15	70	99	66	61	21	4	43	16	47	36	107	64	73	100
84	95	104	99	48	69	80	65	76	45	5	40	107	96	37	78	63	76 1	101	74	42	13	6	19	44	39		103	66	105
107	92	97	82	109	102	47	78	67	74	12	109	38	105	14	69	98	103	62	67	5	20	15	40	17	46	37	68	101	72
96	83	108	103	98	79	68	75	46	77	39	106	13	108	97	104	77	68	75	102	14	41	18	45	38	69	102	71	104	67
7.										8.										9	9.								
8	23	26	47	50	89	80	87	78	91	7	14	3	12	5	34	39	30	61	32	19	6	3	12	15	110	97	106	95	92
1	20	9	22	25	46	49	90	81	86	2	11	6	15	18	43	62	33	40	29	2	11	18	7	4	13	90	93	98	105
10	7	24	27	48	51	88	79	92	77	23	8	13	A	35	38	17	42	31	60	23	20	5	14	109	16	107	96	91	94
19	2	21	52	45	28	93	72	85	82	10	1	22	19	16	63	44	37	28	41	10	1	22	17	8	89	36	67	104	99
6	11	18	29	94	71	/98	83	76	73	21	24	9	48	45	36	27	54	59	56	21	24	9	50	37	108	87	64	35	68
3	30	5	\44/	53	102	105	74/	99	84	110	47	20	25	82	101	64	57	66	53	52	47	38	25	88	75	66	69	190	103
12	47	54	95	104	97	70	101	106	75	89	84	103	46	49	26	51	100	55	58	39	26	51	82	49	86	63	102	65	34
31	4	43	16	55	36	103	64	69	100	104	109	88	83	102	81	72	65	52	67	46	53	48	85	76	81	74	61	70	101
42	13	40	35	96	63	66	109	60	107	85	90	107	80	71	50	69	76	99	96	27	40	83	56	43	62	77	80	33	60
39	32	15	56	37	34	61	58	65	68	108	105	92	87	78	73	94	97	68	75	54	45	42	29	84	73	58	31	78	71
14	41	38	33	62	57	110	67	108	59	91	86	79	106	93	70	77	74	95	<mark>98</mark>	41	28	55	44	57	30	79	72	59	32
10.										11										12	2.								
6	11												-																
	11	20	15	4	37	66	41	62	39	91	22	29	8	1	24	27	10			89	9 92	2 9	78	2 2	9 84	1 7	7 8	0 27	7 108
21	2		15 12	//	37 16	66 61	41 38	62 65	39 42	91 30	22 7	29 92		28	24	27 86	10 75	26										0 27 19 50	
		5	12	//	15	61	38	65	_				23 2	85	<b>9</b> 76	86 <b>25</b>			5 11	. 98	8 33	1 9	0 8	5 9		2	8 10	9 50	79
21	2	5	12 3	19 14	15	61 <b>36</b>	38	65	42	30	7	92	23 2		<b>9</b> 76	86 <b>25</b>	75	26	5 11 3 50	98	8 3: 1 88	1 9 3 9	0 8 3 3	5 9	6 <mark>8</mark> 3 7	L 2	3 10 9 73	9 50 8 10	79 7 26
21	2 7	5 18 13	12 3 8 109	19 14 17 68	16 67 60 35	61 <b>36</b> 99 104	38 105 64 107	65 40 43	42 63	30 93 20 5	7 90 31 94	92 21 6 3	23 2 89 84	85 58 77	9 76 87 60	86 25 82 57	75 52 <b>49</b> 54	26 73 12 81	5 11 3 50 2 53 L 72	98 92 93 83 83	8 3: 1 88 2 99	1 91 3 93 9 81 2 63	0 8 3 3 6 2 3 9	5 9 0 8 3 7 4 7	6 <mark>8</mark> 3 70 4 9: 1 24	L 2 5 4 5 10 1 7	8 10 9 73 94 24 5 43	9 50 8 10 5 11 8 9	0 79 7 26 0 51 106
21 10 1	2 7 22	5 18 13	12 3 8 109 82	19 14 17 68 47	<b>15</b> 67 60	61 <b>36</b> 99 104	38 105 64	65 40 43	42 63 106	30 93 20	7 90 31	92 21 6	23 2 89 84	85 58 77	<b>9</b> 76 87	86 <b>25</b> 82 57	75 52 <b>49</b> 54	26 73 12 81	5 11 3 50 2 53 L 72	98 92 93 83 83	8 3: 1 88 2 99 7 2;	1 91 3 93 9 81 2 63 3 21	0 8 3 3 6 2 3 9 0 7	5 9 0 8 3 7 4 7 3 6	6 8: 3 70 4 9: 1 24 8 10	L 2 5 4 5 10 1 7 3 7	8 10 9 73 94 21 5 43 5 10	9 50 8 10 5 <b>11</b>	0 79 7 26 0 51 106
21 10 1 26	2 7 22 9 50	5 18 13 48	12 3 8 109 82	19 14 17 68 47 34	16 67 60 35 108 69	61 36 99 104 59	38 105 64 107	65 40 43 <b>100</b>	42 63 106 97	30 93 20 5	7 90 31 94	92 21 6 3	23 2 89 84	85 58 77 88	9 76 87 60 83	86 <b>25</b> 82 57	75 52 49 54 13 56	26 73 12 81 48 71	5 11 3 50 2 53 L 72 3 55	98 92 32 8 8 8 8 92 8 92 8 92 8 92 8 92	8 3: 1 88 2 99 7 2; 10 3:	1 91 3 93 9 81 2 63 3 21	0 8 3 3 6 2 3 9 0 7	5 9 0 8 3 7 4 7	6 8: 3 70 4 9: 1 24 8 10	L 2 5 4 5 10 1 7 3 7	8 10 9 73 94 21 5 43 5 10	9 50 8 10 5 11 8 9 5 52	) 79 7 26 0 51 106 2 1
21 10 1 26 23	2 7 22 9 50	5 18 13 48 <b>25</b>	12 3 8 109 82	19 14 17 68 47	16 67 60 35 108 69	61 36 99 104 59	38 105 64 107 98	65 40 43 100 103 96	42 63 106 97 44	30 93 20 5 32	7 90 31 94 19	92 21 6 3 96	23 2 89 84 59	85 58 77 88 15	9 76 87 60 83 98	86 25 82 57 80	75 52 49 54 13 56	26 73 12 81 48 71	5 11 3 50 2 53 4 72 3 55 1 110	. 98 9 91 8 32 8 32 8 32 8 32 8 32 8 32 8 32 8 32	8 3: 1 88 2 99 7 2; 0 3: 1 64	1 90 3 93 9 80 2 63 3 20 4 10	0 8 3 3 6 2 3 9 0 7 01 6	5 9 0 8 3 7 4 7 3 6 2 1	6 8: 3 70 4 9: 1 24 8 10	L 2 5 4 5 10 1 7 3 7 2 6	8 10 9 73 94 21 5 43 5 10	9 50 8 10 5 11 8 9 15 52 6 47	7       79         7       26         0       51         106         2       1         10       10         2       1         10       10
21 10 1 26 23 84	2 7 22 9 50 27	5 18 13 48 <b>25</b> 110	12 3 8 109 82 49	19 14 17 68 47 34	16 67 60 35 108 69	61 36 99 104 59 46	38 105 64 107 98 73	65 40 43 100 103 96	42 63 106 97 44 101	30 93 20 5 32 95	7 90 31 94 19 4	92 21 6 3 96 37	23 2 89 84 59 78 97	85 58 77 88 15	9 76 87 60 83 98 79	86 25 82 57 80 61	75 52 49 54 13 56	26 73 12 81 48 71	5 11 3 50 2 53 L 72 3 55 1 110 6 67	. 98 92 32 28 32 28 32 28 32 32 34	8 3: 1 88 2 99 7 2; 10 3: 1 64 4 19	1 90 3 93 9 80 2 63 3 20 4 10 9 30	0 8 3 3 6 2 3 9 0 7 01 6 6 6	5 9 0 8 3 7 4 7 3 6 2 1	6     83       3     70       4     99       1     24       8     10       5     72       69	$ \begin{array}{c c} 1 & 2 \\ 5 & 4 \\ 5 & 10 \\ 1 & 7 \\ 3 & 7 \\ 2 & 6 \\ \hline 9 & 1 \\ \end{array} $	8 10 9 73 94 24 5 43 5 43 7 8 7 8 4 53	19       50         8       10         5       11         8       9         15       52         15       52         15       52         13       2	<ul> <li>79</li> <li>26</li> <li>51</li> <li>106</li> <li>2</li> <li>10</li> <li>10</li> <li>7</li> </ul>
21 10 26 23 84 51	2 7 22 9 50 27 24 85 52	5 18 13 48 <b>25</b> 110 83	12 3 8 109 82 49 88	19 14 17 68 47 34 81	16 67 60 35 108 69 58	61 36 99 104 59 46 77	38 105 64 107 98 73 102 57 76	65 40 43 100 103 96 45	42 63 106 97 44 101 72	30 93 20 5 32 95 18	7 90 31 94 19 <b>4</b> 33	92 21 6 3 96 37 16	23 2 89 84 59 78 97	85 58 77 88 15 62 101	9 76 87 60 83 98 79	86 25 82 57 80 61 14 99	75 52 49 54 13 56 47 68	26 73 12 81 48 71 10	5 11 3 50 2 53 4 72 3 55 1 110 6 67 9 70	. 98 92 32 83 28 5 10 0 22 7 34 0 37 5 18	8       32         1       88         2       99         7       22         90       33         10       33         11       64         4       19         7       58         8       35	1 90 3 93 9 80 2 63 3 20 4 10 9 30 3 39 3 39	0 8 3 3 6 2 3 9 0 7 01 6 6 6 9 1	5 9 0 8 3 7 4 7 3 6 2 1 5 1 6 6 6	6     83       3     70       4     95       1     24       8     10       5     72       65     72	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	8       10         9       73         94       24         5       43         5       43         6       10         7       8         4       53         5       44         6       53         4       13	19       50         8       10         5       11         8       9         15       52         15       52         15       52         13       2         14       11	<ul> <li>79</li> <li>26</li> <li>51</li> <li>106</li> <li>2</li> <li>10</li> <li>10</li> <li>7</li> </ul>
21 10 26 23 84 51 28	2 7 22 9 50 27 24 85	5 18 13 48 <b>25</b> 110 83 30	12 3 8 109 82 49 88 33	19 14 17 68 47 34 81 78	16 67 60 35 108 69 58 91	61 36 99 104 59 46 77 70	38 105 64 107 98 73 102 57	65 40 43 100 103 96 45 74	42 63 106 97 44 101 72 95	30 93 20 5 32 95 18 41	7 90 31 94 19 4 33 38	92 21 6 3 96 37 16 63	23 2 89 84 59 78 97 <b>36</b> 43	85 58 77 88 15 62 101 64	9 76 87 60 83 98 79 44 103	86 25 82 57 80 61 14 99 46	75 52 49 54 13 56 47 68 107	26 73 12 81 48 71 10 10 66	5 11 3 50 2 53 4 72 3 55 1 110 6 67 9 70	. 98 92 32 83 22 83 5 10 22 7 34 0 37 5 18	8       32         1       88         2       99         7       22         90       33         10       33         11       64         4       19         7       58         8       35	1 90 3 93 9 80 2 63 3 20 4 10 9 30 3 39 5 50	0 8 3 3 6 2 3 9 0 7 01 6 6 6 9 1 6 5	5 9 0 8 3 7 4 7 3 6 3 6 3 6 1 5 1 6 6 9 4	6     8       3     70       4     9!       1     24       8     10       5     71       12     6!       1     6!       4     4	L 2: 5 4 5 10 1 7 3 7 2 6 9 1 5 3 1 5	8       10         9       73         94       24         5       43         5       43         6       10         7       8         4       53         5       44         6       53         4       13	9       50         8       10         5       11         8       9         15       52         15       52         15       52         13       2         14       11         13       6	7       79         7       26         0       51         106       106         2       1         7       10         7       46         43
21 10 26 23 84 51 28 31	2 7 22 9 50 27 24 85 52 29	5 18 13 48 <b>25</b> 110 83 30 87	12 3 8 109 82 49 88 33 80	19 14 17 68 47 34 81 78 89	16 67 60 35 108 69 58 91 54	61 99 104 59 46 77 70 93	38 105 64 107 98 73 102 57 76	65 40 43 100 103 96 45 74 71	42 63 106 97 44 101 72 95 56	30 93 20 5 32 95 18 41 34	7 90 31 94 19 4 33 38 17 42	92 21 6 3 96 37 16 63 40	23 2 89 84 59 78 97 <b>36</b> 43	85 58 77 88 15 62 101 64	9 76 87 60 83 98 79 44 103	86 25 82 57 80 61 14 99 46	75 52 49 54 13 56 47 68 107	26 73 12 81 48 71 10 10 66	5 11 3 50 2 53 1 72 3 55 1 11 6 67 9 70 5 10	. 98 92 32 83 22 83 5 10 22 7 34 0 37 5 18	8       32         1       88         2       99         7       22         90       33         10       33         11       64         4       19         7       58         8       35	1 90 3 93 9 80 2 63 3 20 4 10 9 30 3 39 5 50	0 8 3 3 6 2 3 9 0 7 01 6 6 6 9 1 6 5	5 9 0 8 3 7 4 7 3 6 3 6 2 1 5 1 6 6 9 4	6     8       3     70       4     9!       1     24       8     10       5     71       12     6!       1     6!       4     4	L 2: 5 4 5 10 1 7 3 7 2 6 9 1 5 3 1 5	8       10         9       73         94       21         95       43         95       43         90       10         97       8         94       53         95       44         96       10         97       8         96       44         97       8         94       13	9       50         8       10         5       11         8       9         15       52         15       52         15       52         13       2         14       11         13       6	7       79         7       26         0       51         106       106         2       1         7       10         7       46         43
21 10 26 23 84 51 28 31 86	2 7 22 9 50 27 24 85 52 29	5 18 13 48 <b>25</b> 110 83 30 87	12 3 8 109 82 49 88 33 80 53	19 14 17 68 47 34 81 78 89	16 67 60 35 108 69 58 91 54	61 99 104 59 46 77 70 93	38 105 64 107 98 73 102 57 76	65 40 43 100 103 96 45 74 71	42 63 106 97 44 101 72 95 56	30 93 20 5 32 95 18 41 34 39	7 90 31 94 19 4 33 38 17 42	92 21 6 3 96 37 16 63 40 35	23 2 89 84 59 78 97 <b>36</b> 43	85 58 77 88 15 62 101 64 2 45	9 76 87 60 83 98 79 44 103 100	86 25 82 57 80 61 14 99 46 65	75 52 49 54 13 56 47 68 107	26 73 12 81 48 71 10 10 7 66 4 69	5 11 3 50 2 53 1 72 3 55 1 10 6 67 9 70 5 10 9 10 8	98 92 32 83 5 10 0 22 7 32 37 5 18 8 57	8       3:         1       88         2       99         7       2;         10       3;         11       64         12       9         13       64         14       19         7       58         8       35         7       38         7       38	1 90 3 93 2 63 3 20 4 100 3 39 5 50 3 1	0 8 3 3 6 2 3 9 0 7 01 6 6 6 9 1 6 5 7 4	5 9 0 8 3 7 4 7 3 6 3 6 2 1 5 1 6 6 9 4	6     8       3     70       4     99       1     24       8     10       5     72       12     69       1     60       1     60       1     60       1     60	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	8       10         9       73         94       21         95       43         95       43         90       10         97       8         94       53         95       44         96       10         97       8         96       44         97       8         94       13	19       50         8       10         5       11         8       9         15       52         3       2         4       11         3       6         2       45	79         726         51         106         2         10         2         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         11         12         12
21 10 26 23 84 51 28 31 86 13	2 7 22 9 50 27 24 85 52 29	5 18 13 48 <b>25</b> 110 83 30 87 32	12 3 8 109 82 49 88 33 80 53	19 14 17 68 47 34 81 78 89 92 22	16 67 60 35 108 69 58 91 54 79	61 36 99 104 59 46 77 70 93 90	38 105 64 107 98 73 102 57 76 55	65 40 43 100 103 96 45 74 71 94	42 63 106 97 44 101 72 95 56 75	30 93 20 5 32 95 18 41 34 39 14	7 90 31 94 19 4 33 38 17 42 42 4.	92 21 6 3 96 37 16 63 40 35	23 2 89 84 59 78 97 <b>36</b> 43 102 90	85 58 77 88 15 62 101 64 245	9 76 87 60 83 98 79 44 103 100 84	86 25 82 57 80 61 14 99 46 5 46 5	75 52 49 54 13 56 47 68 107 104 88	26 73 12 81 48 71 10 10 10 4 66 4 65	5       11         3       50         2       53         4       72         3       55         1       110         6       67         9       70         5       109         9       103	98       92       4       92       4       92       4	8       3:         1       88         2       99         7       2;         10       3:         1       64         4       19         7       58         8       35         7       38         15.       15.	1     91       3     92       6     22       6     21       3     21       3     31       3     35       5     50       3     1	0 8 3 3 6 2 9 7 11 6 6 6 9 1 6 5 7 4	5 9 0 8 3 7 4 7 3 6 2 1 5 16 6 6 9 4 0 5 9 4 0 5	6     83       3     70       4     91       1     24       8     100       5     72       12     69       1     60       1     60       1     60       3     2	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	8 10 9 73 44 24 5 44 0 16 5 44 7 8 4 4 53 4 4 53 4 4 13 5 4 4 4 13 5 9 4 2 9 12 2 12 12 12 12 12 12	19       50         8       10         5       11         8       9         15       52         15       52         3       2         4       11         3       6         2       45         0       4:	79         726         951         106         21         107         10         7         10         7         10         7         10         7         10         7         10         7         10         7         11         22
21 10 26 23 84 51 28 31 86 13	2 7 22 9 50 27 24 85 52 29 19	5 18 13 48 25 110 83 30 87 32 6	12 3 8 109 82 49 88 33 80 53	19 14 17 68 47 34 81 78 89 92 22	16 67 60 35 108 69 58 91 54 79 33	61 36 99 104 59 46 77 70 93 90	38 105 64 107 98 73 102 57 76 55 13	65 40 43 100 103 96 45 74 71 94	42 63 106 97 44 101 72 95 56 75 27	30 93 20 5 32 95 18 41 34 39 14	7 90 31 94 19 4 33 38 17 42 4. 98 91	92 21 6 37 96 37 63 40 35	23 2 89 84 59 78 97 <b>36</b> 43 102 90 90	85 58 77 88 15 62 101 64 2 45	9 76 87 60 83 98 79 44 103 100 9 84 89	86 25 82 57 80 61 14 99 46 65 5 5 10	75 52 49 54 13 56 47 68 107 104 888 888 13	26 73 12 81 48 71 10 10 10 4 66 4 65	5 11 3 50 2 53 1 72 3 55 1 110 6 67 9 70 5 10 9 70 5 10 8 70 9 70 5 10 8 70 5 10 8 70 5 10 8 70 5 10 8 70 5 10 8 70 5 10 7 0 5 10 8 70 5 10 5 70 5 10 5 70 5 10 5 70 5 10 5 70 5 10 5 70 5 70	98 99 32 32 32 32 32 32 32 32 34 37 37 37 37 37 37 37 37 37 37 37 37 37	8       3:         1       88         2       99         7       2;         10       3:         11       64         4       19         7       58         8       3!         7       38         7       38         7       38         7       38         7       38         7       38         7       38         7       38         7       55	1     90       3     92       63     22       63     22       63     20       33     30       35     50       36     11	0 8 3 3 6 2 9 7 0	5 9 0 8 3 7 4 7 3 6 2 1 5 16 6 6 9 4 0 5 9 4 0 5	6         83         70           4         92         91         24           1         24         92         92           1         24         92         92           1         24         92         92           1         69         16         92           1         69         16         92           1         69         93         92           3         2         90         10	1         2:           4         10           7         10           7         10           7         10           7         10           7         10           10         7           11         7           12         6           13         7           14         7           15         3           10         5           11         5           12         5           13         5           14         10           15         3           14         10           13         4	8         100           9         73           44         24           45         44           57         8           44         53           5         44	9 50 8 10 5 11 8 9 5 52 47 3 2 4 11 3 6 2 45 0 42 3 20	79         726         951         106         2         10         2         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         10         7         11         22         11         22         11         22         12
21 10 26 23 84 51 28 31 86 13 4 7	2 7 22 9 50 27 24 85 52 29 19 10	5 18 13 48 25 110 83 30 87 32 6 3	12 3 8 109 82 49 88 33 80 53 11 20	19 14 17 68 47 34 81 78 89 92 22 17	16 67 60 35 108 69 58 91 54 79 33 12	61 36 99 104 59 46 77 70 93 90 <b>16</b> 23	38 105 64 107 98 73 102 57 76 55 13 26	65 40 43 100 103 96 45 74 71 94 24 31	42 63 106 97 44 101 72 95 56 75 27 14	30 93 20 5 32 95 18 41 34 39 1 <sup>2</sup> 1- 96	7 90 31 94 19 4 33 38 17 42 4. 98 91 2	92 21 6 37 96 37 16 63 40 35 3 110 97	23 2 89 84 59 78 97 <b>36</b> 43 102 90 90 79 108	85 58 77 88 15 62 101 64 2 45 109 4 3 83	9 76 87 60 83 79 44 103 100 9 84 89 5 72	866 25 82 57 80 61 14 99 466 65 10 85	75 52 49 54 13 56 47 68 107 104 888 13 8	26 73 12 81 48 71 10 10 7 66 4 65	5 11 3 50 2 53 3 55 5 11 110 6 67 9 70 5 109 108 11 12 87 12 12 12 12 12 12 12 12 12 12	98           92           92           10           92           100           22           4           57	8       3:         1       88         2       99         7       2;         90       33         1       64         4       19         7       58         31       54         15.       5         5       5         8       9	1 90 3 92 8 8 2 6 3 2 4 10 3 3 3 3 5 5 3 1 0 4 3 4 6 4	0 8 3 3 6 2 9 7 01 6 6 6 9 1 6 5 7 4 7 9 17 9 8 9 9 1 6 5 7 4 7 9 8 9 9	5 90 0 83 7. 4 7 3 66 2 1. 5 16 6 6 9 4 0 5. 02 4 1 10 06 9	6         83         70           3         70         1         24           1         24         1         24           1         24         1         24           1         24         1         24           1         24         1         24           1         24         1         24           1         66         66         1         66           3         2         200         10         1           1         7         7         1         7	1     2:       4     10       7     6       7     7       2     6       3     7       2     6       3     7       5     3       1     5       3     7       4     10       3     4       10     3       4     2       2     2	8         100           9         73           44         24           45         44           57         8           44         53           5         44	9 50 8 10 5 11 8 9 5 52 5 47 3 2 4 11 3 6 4 11 3 6 4 2 4 5 2 4 5 2 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6	79         726         051         106         2         10         7         10         7         46         43         512         1         1         2         1         2         1         2         1         2         1         2         1         40
21 10 26 23 84 51 28 31 86 13 4 7 2	2 7 22 9 50 27 24 85 52 29 19 10 5	5 18 13 48 25 110 83 30 87 32 6 3	12 3 8 109 82 49 88 33 80 53 53 11 20 9	19 14 17 68 47 34 81 78 89 92 22 17 34	16 67 60 35 108 69 58 91 54 79 33 12 21 76	61 36 99 104 59 46 77 70 93 90 <b>16</b> 23 32	38 105 64 107 98 73 102 57 76 55 13 26 15	65 40 43 100 103 96 45 74 71 94 24 31 28	42 63 106 97 44 101 72 95 56 75 27 14 25	30 93 20 5 32 95 18 41 34 39 1 <sup>2</sup> 1- 96 99	7 90 31 94 19 4 33 38 17 42 4. 98 91 2 95	92 21 6 37 96 37 16 63 40 35 3 110 97	23 2 89 84 59 78 97 <b>36</b> 43 102 90 90 79 90 79 90 79 108 5 71	85 58 77 88 15 62 101 64 2 45 109 4 3 83 80	9 76 87 60 83 79 44 103 100 9 84 89 72	866 25 82 57 80 61 14 99 466 65 5 5 10 85 82	75 52 49 54 13 56 47 68 107 104 888 13 8 8 13 8 5	266 73 12 81 48 71 10 10 10 7 666 65 66 11 3 6 6 11 3 80	5 11 3 50 2 53 1 722 3 555 1 110 6 67 9 70 1 00 1 00 1 00 1 12 8 7 1 12 8 7 1 12 8 7 1 12 8 7 1 12 1 10 1	.         .	8       3:         1       88         2       99         7       22         7       22         7       23         10       33         11       64         12       99         7       58         15.       5         5       5         8       9         11       4         44       9	1     90       3     92       63     92       63     22       63     30       3     31       5     50       33     11       0     4       43     4       46     4       7     5	0 8 3 3 6 2 9 7 0 7 0 7 6 6 6 5 7 4 7 4 7 7 9 9 1 6 5 7 4 7 9 9 2 2 9	5 90 0 83 7. 4 7 3 66 2 1. 5 16 6 6 9 4 0 5. 02 4 1 10 06 9	6         83           7         7           4         9           1         24           9         1           24         9           1         24           1         24           1         24           1         66           3         2           3         2           3         2           1         7           1         7           1         7           1         7	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	8         100           9         74         22           44         25         44           00         16         53           44         53         44           10         16         44           11         13         44           11         14         13           11         12         22         22           11         22         22         2           10         2         2         2	9         50           8         10           5         11           8         9           55         52           55         52           53         52           54         12           55         52           53         52           54         12           55         52           53         6           54         12           55         52           53         6           54         12           55         12           56         12           57         12           58         12           59         12           50         2           50         2           50         2           50         2           50         2           50         2           50         2           50         2           50         2           50         3           50         3	0       79       70         0       51       100         2       1       100         7       1       46         433       12       2         1       2       1         1       2       1         1       2       1         1       2       1         1       2       1         1       2       1         1       2       2         1       400       3
21 10 26 23 84 51 28 31 86 13 4 7 2 41	2 7 22 9 50 27 24 85 52 29 19 10 5 8 99	5 18 13 48 25 110 83 30 87 32 6 3 18 1 40	12 3 8 109 82 49 88 33 80 53 53 11 20 9 98	19 14 17 68 47 34 81 78 89 92 22 17 34 39 108	16 67 60 35 108 69 58 91 54 79 33 12 21 76	61 36 99 104 59 46 77 70 93 90 16 23 32 35	38 105 64 107 98 73 102 57 76 55 13 26 15 30	65 40 43 100 103 96 45 74 71 94 24 31 28 37	42 63 106 97 44 101 72 95 56 75 27 14 25 52	30 93 20 5 32 95 18 41 34 39 12 96 99 99 92 65	7 90 31 94 19 4 33 38 17 42 4. 98 91 2 95	92 21 6 37 16 63 40 35 3 110 97 78 3 103	23 2 89 78 97 36 43 102 90 90 79 108 5 71 108 5 71 3 94	85 58 77 88 15 62 101 64 2 45 101 4 3 83 80 10	9 76 87 60 83 98 79 44 103 100 9 84 89 9 84 72 61 7 70	866 25 82 57 80 61 14 99 46 65 5 10 85 82 73	75 52 49 54 13 56 47 68 107 104 888 13 8 8 13 8 8 5 5 60	266 73 12 81 10 10 10 7 666 10 7 666 11 10 8 6 12 10 10 10 7 10 10 10 10 10 10 10 10 10 10 10 10 10	5 11 3 50 2 53 1 72 3 555 1 11 6 67 9 70 5 10 9 100 100 100 11 14 6 7 15 87 1 14 6 7 15 87 1 14 14 14 14 14 14 14 14 14 14	.         .98	8       3:         1       88         2       99         7       2;         7       2;         7       2;         7       38         15.       5         5       5         8       9         11       44         44       19         5       5         8       9         11       44         44       9         33       4	1     90       3     92       80     92       63     22       63     22       63     22       63     32       55     50       33     1       0     4       43     4       7     5       9     9	0 8 3 3 6 2 3 9 0 7 10 6 6 6 9 1 6 5 7 4 7 4 7 9 10 2 9 2 9 2 2 9 5 9	5 90 8 3 7. 4 7 3 6. 2 1. 5 1. 6 6 6 6 9 4 0 5. 0 2 4 71 10 0 6 99 7 10 6	6         83           7         7           4         9           1         24           9         1           24         9           1         24           1         24           1         24           1         66           3         2           3         2           3         2           1         7           1         7           1         7           1         7	L 22 3 4 10 4 7 3 7 2 6 4 7 3 7 2 6 4 7 3 7 2 6 4 7 3 7 2 6 4 7 4 7 4 7 4 7 4 7 5 4 7 5 4 7 5 5 4 5 5 4 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5	8       100         9       73         9       73         44       22         45       44         5       44         5       44         5       44         10       10         6       44         11       11         12       2         21       2         25       100         26       7         9       5	9       50         8       10         5       11         9       50         10       12         10       12         11       12         12       45         13       6         14       12         15       12         16       12         17       14         18       12         19       14	0       79         0       51         100       51         2       1         1       100         7       10         1       10         7       10         1       10         7       10         1       20         1       20         1       22         1       20         1       20         1       22         1       20         1       20         1       400         3       27         9       74
21 10 26 23 84 51 28 31 86 13 4 7 2 41 106 85	2 7 22 9 50 27 24 85 52 29 19 10 5 8 99	5 18 13 48 25 110 83 30 87 32 6 3 18 1 40 107	12 3 8 109 82 49 88 33 80 53 11 20 9 98 87	19 14 17 68 47 34 81 78 89 92 22 17 34 39 108	16 67 60 35 108 69 58 91 54 79 33 12 21 76 97	61 36 99 104 59 46 77 70 93 90 16 23 32 35 38 75	38 105 64 107 98 73 102 57 76 55 13 26 15 30 51	65 40 43 100 103 96 45 74 71 94 24 31 28 37 74	42 63 106 97 44 101 72 95 56 75 27 14 25 52 29	30 93 20 5 32 95 18 41 34 39 12 96 99 99 92 65	7 90 31 94 19 4 33 38 17 42 4. 98 91 2 95 100 2 95	92 21 6 37 63 77 63 40 35 3 10 97 78 97 78 97 78 97 10 3 66	23 2 89 78 97 36 43 102 90 90 79 108 5 71 108 5 71 3 94	85 58 777 88 15 62 101 64 2 45 109 4 3 83 80 100 62	9 76 87 60 83 98 79 44 103 100 9 84 89 72 61 7 70 81	86 25 82 57 80 61 14 99 46 65 5 10 85 82 73 10	75 52 49 54 13 56 47 68 107 104 888 13 8 8 15 60 5 69	200 73 12 81 48 71 10 10 10 7 66 4 65 11 3 6 6 11 3 8 10 10 7 4 6 6 11 3 10 10 7 10 10 7 10 10 7 10 10 10 10 10 10 10 10 10 10 10 10 10	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	.         .98           .         .92            .32            .83	8       3:3         1       88         2       99         7       2         10       33         1       64         11       64         12       98         33       38         15.       5         5       5         8       91         4       9         14       9         33       4         42       8	1 90 3 92 6 22 6 33 2 6 3 2 4 10 3 3 3 3 3 3 5 5 5 3 3 1 4 0 4 3 4 6 4 7 5 1 9 9 9 9 9	0       8         3       3         6       2         3       9         0       7         6       6         6       5         7       4         7       2         9       2         9       5         9       5         9       88	5 90 88 3 7 4 7 3 6 2 1 5 16 6 6 9 4 0 5 5 7 7 0 6 9 7 0 6 9 7 10 6 3 1	6     83       7     7       4     94       1     24       1     24       5     61       3     2       3     2       3     2       3     2       1     7       7     2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	8       100         9       73         9       73         44       22         45       44         5       44         5       44         5       44         10       10         6       44         11       11         12       2         101       2         22       2         5       100         79       5	9 50 8 10 5 11 5 11 9 9 5 52 47 7 3 2 4 11 3 6 2 45 0 42 3 20 2 22 3 18 4 39 2 22 3 18 4 39 2 22 3 18 4 39 2 22 3 18 4 39 2 24 5 52 2 45 5 52 5 5 5 5	0       79       26         0       51       106         102       1       100         7       10       7         10       7       10         11       40       10         12       1       40         13       27       74         14       400       30         15       19       74         16       40       31         17       40       31         18       27       74         19       74       31         10       10       10         10       10       10         10       10       10         11       400       10         12       10       10         13       10       10         14       10       10         15       10       10         16       10       10         17       10       10         18       17       10
21 10 26 23 84 51 28 31 86 13 4 7 2 41 106 85	2 7 22 9 50 27 24 85 52 29 19 10 5 8 99 42 105	5 18 13 48 25 110 83 30 87 32 6 3 18 1 40 107	12 3 8 109 82 49 88 33 80 53 11 20 9 98 87 110	19 14 17 68 47 34 89 92 22 17 34 39 20 22 17 34 39 108 77 90	16 67 60 35 108 69 58 91 54 79 33 12 21 76 97 88	61 36 99 104 59 46 77 70 93 90 16 23 32 35 38 75	38 105 64 107 98 73 102 57 76 55 102 55 13 26 15 30 51 36	65 40 43 100 103 96 45 74 71 94 24 31 28 37 74 53	42 63 106 97 44 101 72 95 56 75 27 14 25 29 56	30 93 20 5 32 95 18 41 34 39 12 96 99 92 65 102	7 90 31 94 19 4 33 38 17 42 4. 98 91 2 95 100 2 93 64	92 211 6 37 96 37 16 63 40 35 3 110 97 78 97 78 90 103 66 40 35	23 2 89 84 59 78 97 36 43 102 90 90 90 90 90 90 90 90 90 90 90 90 91 108	85 58 777 88 15 62 101 64 2 45 109 4 3 83 80 10 62 4 67	9 76 87 60 83 98 79 44 103 100 84 89 72 61 7 70 81 7 70	86 25 82 57 80 61 14 99 46 55 10 85 82 73 100 57	75 52 49 54 13 56 47 68 107 104 88 107 104 88 13 8 8 13 8 5 60 5 69 28	200 73 12 81 48 71 10 10 7 60 60 10 7 60 10 7 60 10 7 60 10 7 60 10 7 10 7	5 11 3 50 2 53 1 72 3 55 1 110 6 67 9 70 5 109 9 100 9 100 9 100 9 100 9 100 9 100 9 100 9 100 9 1000 9 1000 9 1000 9 1000 9	98       92       1       92       32       8       10       22       4       55       55       55       55       8       99       90       92       10       33       35       11       12       33       35       14       55       55       8       99       8       92       14       15       15       16       17       18       19       10       10       10       11       12       12       13       14       15       15       12       13       14       15       15       12       14       15       15       16       16       17       18       17       14       16       17       18 <t< td=""><td>8       3:3         1       88         2       99         7       22         90       3:3         1       64         10       3:4         11       64         12       3:5         5       5         91       4         92       8         93       4         93       5</td><td>1       90         3       92         6       3         22       6         33       22         6       4         7       5         7       5         9       9         9       9         9       9         94       8</td><td>0 8 3 3 6 2 3 9 0 7 10 6 6 6 6 9 1 6 5 7 4 7 9 9 9 2 9 9 9 2 9 5 9 8 8 8</td><td>5 90 88 3 7 4 7 3 6 2 1 5 16 6 6 9 4 0 5 5 7 7 0 6 9 7 10 6 9 7 10 6 3 1</td><td>6       82         3       70         4       92         1       24         1       24         5       60         3       2         6       83         1       66         3       2         6       60         3       2         0       6         7       2         10       10         9       6</td><td><math display="block">\begin{array}{c ccccccccccccccccccccccccccccccccccc</math></td><td>8       100         9       73         9       73         9       73         9       73         9       10         7       8         9       10         7       8         9       10         9       10         9       10         9       10         9       10         10       10</td><td>9       50         8       10         5       11         8       9         9       50         10       12         11       12         12       44         13       6         10       4         11       2         12       2         13       2         14       3         15       2         14       3         15       2         14       3</td><td>0       79       26         0       51       106         2       1       10         7       10       7         1       10       7         1       46       43         5       12         1       22         1       22         1       22         1       22         1       22         1       40         3       76</td></t<>	8       3:3         1       88         2       99         7       22         90       3:3         1       64         10       3:4         11       64         12       3:5         5       5         91       4         92       8         93       4         93       5	1       90         3       92         6       3         22       6         33       22         6       4         7       5         7       5         9       9         9       9         9       9         94       8	0 8 3 3 6 2 3 9 0 7 10 6 6 6 6 9 1 6 5 7 4 7 9 9 9 2 9 9 9 2 9 5 9 8 8 8	5 90 88 3 7 4 7 3 6 2 1 5 16 6 6 9 4 0 5 5 7 7 0 6 9 7 10 6 9 7 10 6 3 1	6       82         3       70         4       92         1       24         1       24         5       60         3       2         6       83         1       66         3       2         6       60         3       2         0       6         7       2         10       10         9       6	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	8       100         9       73         9       73         9       73         9       73         9       10         7       8         9       10         7       8         9       10         9       10         9       10         9       10         9       10         10       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21 10 26 23 84 51 28 31 86 13 4 7 2 41 106 85 100 43	2 7 22 9 50 27 24 85 52 29 19 10 5 8 99 42 105	5 18 13 48 25 110 83 30 87 32 6 3 18 1 40 107 86 91	12 3 8 109 82 49 88 33 80 53 11 20 9 98 87 110 67	19 14 17 68 47 34 89 92 22 17 34 39 222 17 34 39 108 77 90	1.6 67 60 35 108 69 58 91 54 79 33 12 21 76 97 88 109	61 36 99 104 59 46 77 70 93 90 16 23 32 35 38 75 9 96	38 105 64 107 98 73 102 57 76 55 13 26 15 30 51 36 55	65 40 43 100 103 96 45 74 71 94 24 31 28 37 74 53 50	42 63 106 97 44 101 72 56 75 27 14 25 52 29 56 73	30 93 20 5 32 95 18 41 34 39 12 96 99 92 65 102 51	7 90 31 94 19 4 33 38 17 42 4. 98 91 2 95 100 2 93 64	92 211 6 37 96 37 16 37 16 33 40 35 3 10 97 78 3 10 66 66 10 52	23 2 89 84 59 78 97 <b>36</b> 43 102 90 <b>9</b> 90 <b>9</b> 90 <b>9</b> 90 <b>9</b> 90 <b>9</b> 90 <b>9</b> 90 <b>1</b> 78 43 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 102 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> 10 <b>1</b> <b>1</b> 10 <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>	85 58 77 88 15 62 101 64 2 45 109 4 3 83 80 10 52 4 62 4 7 56	9 76 87 60 83 79 44 103 100 84 89 72 61 77 0 81 770 81 76 510	86 25 82 57 80 61 14 99 46 65 10 85 82 73 100 57 5 68	75 52 49 54 13 56 47 68 107 104 888 13 8 13 8 13 8 13 5 60 5 69 288 13 75	200 73 12 81 48 71 10 10 70 60 10 70 60 11 10 70 60 11 10 70 60 11 10 70 60 11 10 70 60 11 10 70 70 10 70 70 10 70 70 70 70 70 70 70 70 70 70 70 70 70	5 11 3 50 2 53 1 72 3 55 1 110 6 67 9 70 5 109 9 100 9 100 9 100 9 100 9 100 9 70 1 12 8 77 1 4 5 57 1 4 5 57 1 10 1	.         98           .         92           .         32           .         8.8           .         8.8           .         10           .         32           .         34           .         35           .         35           .         35           .         35           .         35           .         35           .         35           .         35           .         35           .         35           .         35           .         37           .         37           .         37           .         37           .         .           .         .           .         .           .         .           .         .           .         .           .         .           .         .           .         .           .         .           .         .           .         .           . </td <td>8       3:3         1       88         2       99         7       2,2         8       3:3         1       64         4       10         7       58         3       15.         5       5         8       9         1       4         9       1         4       9         3       4         9       3         42       8         5       5         8       8</td> <td>1       91         3       92         4       83         22       63         33       21         4       100         33       33         5       56         33       11         00       4         43       4         47       5         99       99         99       99         94       8         33       6</td> <td>0 8 3 3 6 2 3 9 0 7 01 6 6 6 6 5 7 4 7 9 1 6 5 7 4 7 9 9 1 1 7 9 9 5 8 8 8 8 8 8 8 8 8 8 8 8 8</td> <td>5 90 8377 377 367 217 516 666 694 005 70 9997 1069 9997 1069 910 60311</td> <td>6       82         3       70         4       92         1       2         5       71         6       72         6       7         3       2         6       1         6       1         7       2         6       10         11       7         7       2         6       10         10       10         9       6         10       10</td> <td>1     21       2     4       4     7       7     6       7     7       6     1       7     7       7     6       1     5       1     5       3     7       6     3       4     10       03     4       2     2       2     6       5     10       6     55       6     55       8     5</td> <td>8       100         9       73         9       73         9       73         9       73         9       74         20       16         7       8         44       11         9       6         7       8         9       6         7       3         96       7</td> <td>9       50         5       11         5       11         8       9         95       52         4       12         3       66         2       45         0       43         202       22         3       14         3       5         23       14         35       24         66       32         7       14</td> <td>7       7       26         7       26       51         100       51       100         2       1       100         7       1       46         43       3       12         1       22       1         1       22       1         1       22       1         1       20       1         1       22       1         1       22       1         1       22       1         1       20       1         3       76         3       76         29       29</td>	8       3:3         1       88         2       99         7       2,2         8       3:3         1       64         4       10         7       58         3       15.         5       5         8       9         1       4         9       1         4       9         3       4         9       3         42       8         5       5         8       8	1       91         3       92         4       83         22       63         33       21         4       100         33       33         5       56         33       11         00       4         43       4         47       5         99       99         99       99         94       8         33       6	0 8 3 3 6 2 3 9 0 7 01 6 6 6 6 5 7 4 7 9 1 6 5 7 4 7 9 9 1 1 7 9 9 5 8 8 8 8 8 8 8 8 8 8 8 8 8	5 90 8377 377 367 217 516 666 694 005 70 9997 1069 9997 1069 910 60311	6       82         3       70         4       92         1       2         5       71         6       72         6       7         3       2         6       1         6       1         7       2         6       10         11       7         7       2         6       10         10       10         9       6         10       10	1     21       2     4       4     7       7     6       7     7       6     1       7     7       7     6       1     5       1     5       3     7       6     3       4     10       03     4       2     2       2     6       5     10       6     55       6     55       8     5	8       100         9       73         9       73         9       73         9       73         9       74         20       16         7       8         44       11         9       6         7       8         9       6         7       3         96       7	9       50         5       11         5       11         8       9         95       52         4       12         3       66         2       45         0       43         202       22         3       14         3       5         23       14         35       24         66       32         7       14	7       7       26         7       26       51         100       51       100         2       1       100         7       1       46         43       3       12         1       22       1         1       22       1         1       22       1         1       20       1         1       22       1         1       22       1         1       22       1         1       20       1         3       76         3       76         29       29
21 10 26 23 84 51 28 31 86 13 4 7 2 41 106 85 100 43	2 7 22 9 50 27 24 85 52 29 19 10 5 8 99 42 105 84 101	5 18 13 48 25 110 83 30 87 32 6 3 18 1 40 107 86 91	12 3 8 109 82 49 88 33 80 53 11 20 9 98 87 110 67 104 81	19 14 17 68 47 34 81 78 89 92 22 17 34 39 108 77 90 95	1.6 67 60 35 108 69 58 91 54 79 33 12 21 76 97 88 109 78 80 97 88 63	61 36 99 104 59 46 77 70 93 90 16 23 32 35 38 75 96 89	38 105 64 107 98 73 102 57 76 55 13 26 15 30 51 36 55 72	65 40 43 100 103 96 45 74 71 94 24 31 28 37 74 53 50 57	42 63 106 97 44 101 72 95 56 75 27 14 <b>25</b> 29 56 73 54	30 93 20 5 32 95 18 41 34 39 7 2 96 99 992 65 102 51 54	7 90 31 94 19 4 33 8 17 42 4. 98 91 2 95 100 2 93 64 39 50	92 21 6 3 96 63 37 16 63 40 35 10 97 78 97 78 97 10 52 55	23 2 89 84 59 78 97 <b>36</b> 43 102 90 <b>9</b> 90 <b>9</b> 90 <b>9</b> 90 <b>9</b> 90 <b>1</b> 79 4 3 94 5 77 1 104 5 3 94 5 77 104 5 9 90 <b>1</b> 90 90 90 90 90 90 90 90 90 90 90 90 90	85 58 77 88 15 62 101 64 2 45 109 4 3 83 80 100 62 4 67 56 67 56 9 43	9 76 87 60 83 98 79 44 103 100 84 89 72 61 7 70 81 7 70 81 7 61 105 81 7 61 105 81 7 61 105 81 7 61 81 7 81 7 81 7 81 83 83 83 83 83 88 83 88 83 88 83 88 83 88 88	86 25 82 57 80 61 14 99 62 65 10 85 82 73 100 57 5 68 35	75 52 49 54 13 56 47 68 107 104 88 13 8 8 13 8 8 13 8 8 5 60 5 69 288 75 28 75 32	266 73 12 81 10 10 7 66 10 7 66 10 7 66 11 10 7 66 11 10 7 66 11 10 7 66 11 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 10 10 10 10 10 10 10 10 10 10	5 11 3 50 2 53 3 55 1 110 6 67 9 70 5 109 9 108 8 12 5 87 1 4 5 7 7 18 4 59 7 26 8 29 1 20 1 20	.     98       .     92       .     32       .     32       .     32       .     32       .     32       .     32       .     33       .     33       .     33       .     33       .     33       .     35       .     14       .     55       .     9       .     9       .     8       .     55       .     8       .     55       .     8       .     8       .     9       .     8       .     8       .     9       .     8       .     8       .     8       .     8       .     8       .     8       .     8       .     8       .     8       .     8       .     8	8       3:3         1       88         2       99         7       2,2         8       3:3         7       58         9       3:3         1       64         1       5         5       5         8       9         1       4         9       1         4       9         3       4         9       3         4       9         3       4         5       5         5       5         8       8	1       91       91         3       92       61         4       100       31         5       50       31         33       31       32         5       50       31         0       4       43         46       4         7       5         99       9         93       3         33       4         8       6         4       8         33       6         34       6	0 8 3 3 6 2 3 9 0 7 1 6 6 5 7 4 7 9 9 1 6 5 7 4 7 9 9 5 9 1 1 7 9 9 5 9 5 8 8 8 8 8 8 5 5 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5 9. 0 8. 3 7. 4 7 3 6. 2 1. 5 16 6 6 9 4 0 5. 1. 6 9 9 4 0 5. 1. 1. 0 6 9 7 0 6 9 7 0 6 9 7 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	6       82         3       70         4       92         1       2         5       71         6       72         6       7         3       2         6       1         6       1         7       2         6       10         11       7         7       2         6       10         10       10         9       6         10       10	L 2: 4 10: 10: 10: 10: 10: 10: 10: 10:	8       100         9       73         9       73         9       73         9       73         9       73         9       6         7       8         9       6         7       8         9       6         7       100         9       6         7       100	9       50         5       11         8       9         5       11         8       9         5       52         47       33         2       45         62       45         0       42         0       42         3       20         2       23         3       20         2       23         3       20         2       23         3       20         3       20         3       20         2       23         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3       20         3	7       7       26         7       26       51         100       51       100         2       1       100         7       1       46         43       35       12         1       22       1         1       22       1         1       22       1         1       22       1         1       22       1         1       22       1         1       22       1         1       20       1         3       76       1         3       76       29         3       62       29         3       62       29
21 10 26 23 84 51 28 31 86 13 7 2 41 106 85 100 43 92	2 7 22 9 50 27 24 85 52 29 10 5 8 99 42 105 84 101 44	5 18 13 48 25 110 83 30 87 32 6 3 18 1 40 107 86 91 66	12 3 8 109 82 49 88 33 80 53 11 20 9 98 87 110 67 104 81	19 14 17 68 47 34 89 92 22 17 34 39 108 77 90 95 68	1.6 67 60 35 108 69 58 91 54 79 33 12 21 76 97 88 109 78 80 97 88 63	61 36 99 104 59 46 77 70 93 90 16 23 32 35 38 75 96 89 70 79	38 105 64 107 98 73 102 57 76 55 13 26 15 30 51 36 55 72 47	65 40 43 100 103 96 45 74 71 94 24 31 28 37 74 53 50 57 60	42 63 106 97 44 101 72 95 56 75 27 14 25 29 56 73 52 29 54 49	30 93 20 5 32 95 18 41 34 39 12 96 99 92 65 102 51 54 47 38	7 90 31 94 19 4 33 8 17 42 4. 98 91 2 95 100 2 93 64 39 50	92 21 6 3 96 63 37 16 63 40 35 10 78 97 78 97 78 97 100 666 100 52 55 48	23 2 89 84 59 78 97 36 43 102 90 90 79 108 5 71 104 5 77 1104 5 3 94 5 77 1104 5 3 94 5 77 8 90 7 90 90 7 90 90 7 90 90 90 90 90 90 90 90 90 90 90 90 90	85 58 77 88 15 62 101 64 2 45 100 4 3 83 80 10 62 4 56 43 67 56 43 36	9         76           87         60           83         98           79         44           103         100           9         844           79         84           99         84           90         84           91         72           9         84           100         81           7         70           81         76           105         22           101         21           102         41	86 25 80 61 14 99 46 65 10 85 82 73 100 57 5 68 35 20	75 52 49 54 13 56 47 68 107 104 88 13 8 8 13 8 8 13 8 8 13 8 5 60 5 69 28 8 75 32 23	266 73 12 81 48 71 10 10 766 10 7 66 11 65 11 65 11 12 66 11 12 66 11 12 10 7 4 66 11 12 10 10 10 7 4 8 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 7 10 10 7 10 10 7 10 10 7 10 10 7 10 10 10 7 10 10 10 7 10 10 7 10 10 10 7 10 10 7 10 10 10 7 10 10 10 7 10 10 10 10 7 10 10 10 10 10 10 10 10 10 10 10 10 10	5 11 3 50 2 53 5 51 1 72 3 55 1 110 6 67 9 70 5 109 9 108 8 12 5 87 1 4 5 7 7 18 4 55 7 26 8 29 5 18 8 30 1 2 5 18 1 10 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	.         98           .         92           .         32           .         32           .         32           .         32           .         32           .         32           .         32           .         33           .         33           .         33           .         33           .         33           .         .           .	3       3:3         4       9         7       2;         99       3:3         1       64         10       3:3         15.       5         5       5         8       9         14       19         15.       5         5       5         8       9         1       4         9       3         4       9         33       4         42       8         5       5         58       8         8       8         7       5	1       91         3       92         6       3         22       6         33       22         6       3         4       8         33       9         99       9         99       9         99       9         99       9         33       0         66       3         66       3         7       5	0 8 3 3 6 2 9 9 0 7 6 6 6 9 1 6 5 7 4 7 9 9 1 6 5 7 4 7 9 9 1 6 5 5 6 8 8 8 8 8 8 8 8 8 8 8 8 8	5 9. 0 8. 3 7. 4 7 3 6. 2 1. 5 16 6 6 9 4 0 5. 1. 6 9 9 4 0 5. 1. 1. 0 6 9 7 0 6 9 7 0 6 9 7 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	6 83 70 4 99 4 99 1 24 8 10 5 77 2 69 1 66 10 1 7 6 5 60 10 1 7 7 2 10 17 9 66 10 5 7 2 10	L 2: 4 7: 10: 4 7: 4 7: 5 9 1: 5 9 1: 5 1: 6 0: 5 1: 6 0: 5 1: 6 0: 5 1: 6 0: 5 1: 6 0: 7 0: 6 0: 8 3: 7 0: 6 0: 7 0	8       100         99       73         94       24         25       44         20       10         7       8         44       11         9       6         7       2         201       2         21       2         22       2         25       100         7       9         66       7         14       3         306       7         100       1	9       50         8       100         5       11         5       12         6       12         7       12         108       12         11       30         10       43         11       30	79       79         26       51         100       51         2       1         10       7         10       7         11       46         433       5         12       1         13       76         14       40         15       19         14       40         15       19         16       27         17       3         18       17         19       74         10       76         11       20         12       29         13       76         14       29         15       29         14       20         15       20         15       15
21 10 26 23 84 51 28 31 86 13 4 7 2 41 106 85 100 43 92 83	2 7 22 9 50 27 24 85 52 29 10 5 8 99 42 105 84 101 44 93	5 18 13 48 25 110 83 30 87 32 6 3 18 1 40 107 86 91 66 103	12 3 8 109 82 49 88 33 80 53 11 20 9 98 87 110 67 104 81 94	19 14 17 68 47 34 89 92 22 17 34 39 222 17 34 39 108 77 90 95 68 65	16 67 60 35 108 69 58 91 54 79 33 12 21 76 97 88 109 78 83 63 46	61 36 99 104 59 46 77 70 93 90 16 23 32 35 38 75 96 89 70 79	38 105 64 107 98 73 102 57 76 55 13 26 15 30 51 36 55 72 47 62	65 40 43 100 103 96 45 74 71 94 24 31 28 37 74 53 50 57 60 71	42 63 106 97 44 101 72 95 56 75 27 14 25 52 29 56 73 54 49 58	30 93 20 5 32 95 18 41 34 39 12 1 96 99 92 655 102 51 54 47 38 49	7 90 31 94 19 4 33 38 17 42 4. 98 91 2 95 91 2 95 100 64 39 50 53	92 21 6 3 96 63 37 16 63 40 35 10 78 97 78 97 78 97 100 666 100 52 55 48	23 2 89 84 59 78 97 36 43 102 90 90 79 108 5 71 104 5 77 1104 5 3 94 5 77 1104 5 3 94 5 77 8 90 7 90 90 7 90 90 5 90 90 90 90 90 90 90 90 90 90 90 90 90	85 58 77 88 15 62 101 64 2 45 100 4 3 83 80 10 62 4 56 43 67 56 43 36	9         76           87         60           83         98           79         44           103         100           9         844           79         84           99         84           90         84           91         72           9         84           100         81           7         70           81         76           105         22           101         21           102         41	86 25 80 61 14 99 46 65 10 85 82 73 100 57 568 35 20	75 52 49 54 13 56 47 68 107 104 88 13 8 8 13 8 8 13 8 8 13 8 5 60 5 69 28 8 75 32 23	266 73 12 81 48 71 10 10 766 10 7 66 11 65 11 65 11 12 66 11 12 66 11 12 10 7 4 66 11 12 10 10 10 7 4 8 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 10 7 10 10 7 10 10 7 10 10 7 10 10 7 10 10 7 10 10 10 7 10 10 10 7 10 10 7 10 10 10 7 10 10 7 10 10 10 7 10 10 10 7 10 10 10 10 7 10 10 10 10 10 10 10 10 10 10 10 10 10	5 11 3 50 2 53 5 51 1 72 3 55 1 110 6 67 9 70 5 109 9 108 8 12 5 87 1 12 6 7 7 18 4 59 7 26 8 29 1 12 6 7 7 18 4 59 5 18 8 29 1 12 6 33 7 20 8 51 1 10 1 10	.         98           .         92           .         32           .         32           .         32           .         32           .         32           .         32           .         32           .         33           .         33           .         33           .         33           .         33           .         .           .	3       3:3         4       19         7       2;         90       3:3         1       64         10       3:8         11       64         12       3:8         15.       5         5       5         8       9         11       4         4       9         3       4         4       9         3       4         4       9         3       4         5       5         58       8         87       5         88       8         7       5	1       91         3       92         6       3         22       6         33       22         6       3         7       5         9       9         9       9         99       9         99       9         99       9         33       0         66       3         66       3         66       3         7       5	0 8 3 3 6 2 9 9 0 7 6 6 6 9 1 6 5 7 4 7 9 9 1 6 5 7 4 7 9 9 1 6 5 5 6 8 8 8 8 8 8 8 8 8 8 8 8 8	5 90 0 8 3 7 4 7 4 7 5 16 6 6 9 4 0 5 1 1 5 16 6 6 9 4 0 5 1 1 1 1 1 1 1 1 1 1 1 1 1	6 83 70 4 99 4 99 1 24 8 10 5 77 2 69 1 66 10 1 7 6 5 60 10 1 7 7 2 10 17 9 66 10 5 7 2 10	L 2: 4 7: 10: 4 7: 4 7: 5 9 1: 5 9 1: 5 1: 6 0: 5 1: 6 0: 5 1: 6 0: 5 1: 6 0: 5 1: 6 0: 7 0: 6 0: 8 3: 7 0: 6 0: 7 0	8       100         99       73         94       24         25       44         20       10         7       8         44       11         9       6         7       2         201       2         21       2         22       2         25       100         7       9         66       7         14       306         77       100	9       50         8       100         5       11         5       12         6       12         7       12         108       12         11       30         10       43         11       30	79       79         26       51         100       51         2       1         10       7         10       7         11       46         433       5         12       1         13       76         14       40         15       19         14       40         15       19         16       27         17       3         18       17         19       74         10       76         11       20         12       29         13       76         14       29         15       29         14       20         15       20         15       15

Figure 19 and Figure 20 are closed tours with square numbers in {3,6} leaper circuit and rector circuit respectively. Figure 21 has the multiples of 14 on the knight wheel round the initial cell. Magic squares have always been fascinating. Figure 22 has the first nine even numbers forming 3x3 magic square. Figure 23 has the first sixteen even numbers forming 4x4 magic square. Figure 24 has the multiples of 10 arranged in triangular shapes.

41	18	55	14	43	20	57	12	45	10	89	94	17	64	19	4	15	12	21	6	26	31	8	19	24	33	6	17	90	93
54	1	42	19	56	13	44	9	22	59	92	63	90	3	16	83	20	5	14	11	9	12	25	32	7	18	91	94	5	16
17	40	15	110	93	50	21	58	11	46	95	88	93	18	65	86	13	80	7	22	30	27	10	13	20	23	34	15	92	89
78	53	2	51	76	109	8	95	60	23	62	91	2	87	84	105	82	23	10	79	11	40	37	28	35	14	87	22	95	4
39	16<	77	92	49	94	75	190	47	96	1<	96	61	104	107	66	85	8	81	24	38	29	42	57	86	21	2	97	88	75
82	79	52	3	108	101	48	7	24	61	60	39	98	109	68	73	106	43	78	9	41	58	39	36	$\mathbf{X}$	104	85	74	3	96
69	38	83	80	91	74	99	102	97	26	97	110	103	70	57	108	67/	74	25	48	60	43	56	107	82	71	98	103	76	73
84	81	68	73	4	107	6	25	62	103	38	59	40	99	102	69	12	זד	50	75	55	108	59	70	105	84	81	72	99	102
37	70	87	90	67	34	65	98	27	30	41	32	35	58	71	56	101	54	47	26	44	61	106	83	80	65	68	101	50	77
88	85	72	35	106	5	32	29	104	63	34	37	30	43	1.00	53	28	45	76	51	109	54	63	46	69	52	79	48	67	100
71	36	89	86	33	66	105	64	31	28	31	42	33	36	29	44	55	52	27	46	62	45	110	53	64	47	66	51	78	49
19.										20	).									2	1.								
87	80	31	52	103	94	33	98	105	92	98	101	96	83	92	103	88	109	90	105	98	73	96	109	92	75	102	85	104	77
30	51	88	79	32	99	104	93	34	97	95	82	99	102	31	108	91	104	33	110	95	68	99	74	101	108	79	76	87	84
81	86	53	102	89	78	95	100	91	106	100	97	80	93	84	87	32	89	106	9	66	97	72	93	110	91	86	103	78	105
50	29	82	17	8	101	90	77	96	35	81	94	3	86	1	30	107	10	19	34	69	94	67	100			107	58	83	88
83	54	85	6	3	18	9	36	107	76	72	79	64	29	4	85	6	13	8	11	62	65	70	1	50	59	90	81	106	57
28	49	16	13	10	7	$\geqslant$	109	20	37	63	76	73	_2<	65	28	25	20	35	18	11	2	63	60	53	40	49	56	89	82
55	84	11	2	5	14	19	38	75	108	74	71	78	27	24	5	14	7	1.2	21	64	61	10	51	20	55	-30	39	48	45
48	27	44	15	12	1	74	69	110	21	77	62	75	66	15	26	55	22	17	36	3	12	19	54	31	52	41	46	29	38
43	56	47	62	59	70	39	66	73	68	70	51	68	59	54	23	16	39	42	45	6	9	4	15	18	21	34	25	44	47
26	45	58	41	24	63	60	71	22	65	61	58	49	52	67	56	47	44	37	40	13	16	7	32	35	26	23	42	37	28
67	42	25	46	61	40	23	64	67	72	50	69	60	57	48	53	38	41	46	43	8	5	14	17	22	33	36	27	24	43
57	42																												

For over a millennium, knight tour was confined to 2-D boards and it was extended to 3-D board some 250 years ago. Figure 25 is a monogram tour on 2x5x11 board. Readers can visualize it by stacking two 5x11board in alphabetical order. The square numbers and cubic numbers 1<sup>3</sup>, 2<sup>3</sup>, 3<sup>3</sup> and 4<sup>3</sup>, namely 1, 8, 27 and 64 delineate letters 'B' and 'P', the first letters in *Best Problems*. Figure 26 delineates the numerals '1' and '0' which correlate with the issue number 110. Readers may like to compose more figured tours.

																							1
5	10	1-	_32	51	20	47	72	53	88	45		12	65	8	85	110	73	50	21	44	71	92	
2	31	4	19	36	33	52	87	46	95	54		29	18	8:L	66	49	86	109	70	93	56	43	
11	6	9-	-34	77	74	101	98	89	104	91		80	13	64	7	84	67	48	103	22	59	106	
28	3	16	37	100	35	76	69	94	55	96		17	30	27	82	63	40	23	108	61	42	57	
15	38	25	78	75	68	99	102	97	90	105	А	26	79	14	39	24	83	62	41	58	107	60	B
25																							
25.																							
25. 13	18	7	38	1	76	65	84	103	68	51		44	37	24	29	8	81	102	75	50	83	60	1
	18 39	7 2	38 17	1 4						51 104		44 23	37 30	24 45		<mark>8</mark> 101		102 49	75 82	50 61	83 74	60 89	
13		7 2 5		1 4 9																			
13 6	39	_	17	1 4 9 16	71	110	69	66	55	104		23	30	45	36	101 46	28 35	49	82	61	74	89	
13 6 19	39 12 95	5	17 96	1 4 9 16 97	71 80 93	110 77	69 72	66 85	55 52	104 67	A	23 14	30 43	45 32	36 25 34	101 46	28 35 <mark>100</mark>	49 64	82 99 48	61 90	74 59 88	89 62	-

26.