

INDEX TO VOLUME 36, 2010

Contributor Profiles

March	Arkady Alt	65
May	John G. Heuver	193
September	Václav Konečný	257

Skoliad *Lily Yen and Mogens Lemvig Hansen*

February	No. 122	1
March	No. 123	67
April	No. 124	129
May	No. 125	194
September	No. 126	259
October	No. 127	353
November	No. 128	417
December	No. 129	481

Mathematical Mayhem *Ian VanderBurgh*

February	7
March	72
April	134
May	203
September	265
October	361
November	423
December	487

Mayhem Problems

February	M420–M425	7
March	M426–M431	72
April	M432–M437	134
May	M438–M444	203
September	M445–M450	265
October	M451–M456	361
November	M457–M462	423
December	M463–M469	487

Mayhem Solutions

February	M388–M393	9
March	M394–M400	74
April	Totten M1–Totten M10	136
May	M381, M401–M406	205
September	M407–M412	267
October	M413–M419	363
November	M420–M425	425
December	M426–M431	489

Problem of the Month *Ian VanderBurgh*

February	14
March	79
April	145
May	212
September	271
October	369

November	430
December	494
Mayhem Articles		
Square Triangles,	<i>Peter Hurthig</i>	432
The Olympiad Corner <i>R.E. Woodrow</i>		
February	No. 283	18
March	No. 284	81
April	No. 285	149
May	No. 286	214
September	No. 287	274
October	No. 288	372
November	No. 289	435
December	No. 290	496
Book Reviews <i>Amar Sodhi</i>		
When Less is More: Visualizing Basic Inequalities,		
by Claudi Alsina and Roger Nelsen		
	<i>Reviewed by Bruce Shawyer</i>	39
I Want to be a Mathematician, A Conversation with Paul Halmos,		
produced and directed by George Csicsery		
	<i>Reviewed by Brenda Davison</i>	40
The Mathematics of the Heavens and the Earth: The Early History		
of Trigonometry, by Glen Van Brummelen		
	<i>Reviewed by Menolly Lysne</i>	103
Homage to a Pied Puzzler <u>and</u> Mathematical Wizardry for a Gardner,		
Edited by Ed Pegg, Jr.; Alan Schoen, and Tom Rodgers		
	<i>Reviewed by David Ehrens</i>	104
Lessons in Play: An Introduction to Combinatorial Game Theory,		
by Michael H. Albert, Richard J. Nowakowski, and David Wolfe		
	<i>Reviewed by Sarah K.M. Aldous</i>	105
Mythematics: Solving the Twelve Labors of Hercules,		
by Michael Huber		
	<i>Reviewed by Edward Barbeau</i>	170
Origami Tessellations: Awe-Inspiring Geometric Designs,		
by Eric Gjerde, <u>and</u> Ornamental Origami: Exploring 3D Geometric		
Designs, by Meenakshi Mukerji		
	<i>Reviewed by Georg Gunther</i>	237
Mrs. Perkins's Electric Quilt: And Other Intriguing Stories of		
Mathematical Physics, by Paul J. Nahin		
	<i>Reviewed by Nora Franzova</i>	301
A Taste of Mathematics Volume VIII, Problems		
for Mathematics Leagues III,		
by Peter I. Booth, John Grant McLoughlin, and Bruce L.R. Shawyer		
	<i>Reviewed by Nancy Clark</i>	303
Explorations in Geometry, by Bruce Shawyer		
	<i>Reviewed by J. Chris Fisher</i>	391
Who Gave You the Epsilon? & Other Tales of Mathematical History		
Edited by Marlow Anderson, Victor Katz, and Robin Wilson		
	<i>Reviewed by Jeff Hooper</i>	450

The Princeton Companion to Mathematics , Edited by Timothy Gowers with associate editors June Barrow-Green and Imre Leader Reviewed by R.W. Richards	451
The Calculus Collection, A Resource for AP and Beyond , Edited by Caren L. Diefenderfer and Roger B. Nelsen Reviewed by Amar Sodhi	520
An Episodic History of Mathematics: Mathematical Culture Through Problem Solving , by Steven G. Krantz Reviewed by Ed Barbeau	521
Methods for Euclidean Geometry , by Owen Byer, Felix Lazebnik and Deirdre L. Smeltzer Reviewed by J. Chris Fisher	522
Crux Articles <i>James Currie</i>	
On an Inequality from the IMO 2008 <i>Nikolai Nikolov and Svilena Hristova</i>	42
Ratio-Type Inequalities for Bisectors, Medians, Altitudes, and Sides of a Triangle, by <i>Mihály Bencze and Shan-He Wu</i>	304
Polynomials Without Sign Changes, by <i>Gerhard J. Woeginger</i>	309
On a Trigonometric Inequality and the Sum of Perimeters of n -gons <i>Erhard Braune</i>	393
When do the Curves $xy \equiv 1 \pmod{n}$ and $x^2 + y^2 \equiv 1 \pmod{n}$ Intersect? <i>Sara Hanrahan and Mizan R. Khan</i>	453
A Solution to Gibson's and Rodgers' Problem in 3 Dimensions <i>Nguyen Minh Ha</i>	524
Inequalities Involving Reciprocals of Triangle Areas <i>Yakub N. Aliyev</i>	535
A Generalization of Mayhem Problem M396 Involving Pythagorean Triangles <i>Konstantine Zelator</i>	540
Problems	
February 3501–3513	44
March 3505, 3514–3526	107
April 3527–3538	171
May 3500, 3528, 3532, 3539–3550	239
September 3551–3563	314
October 3564–3575	396
November 3576–3587	459
December 3574, 3588–3600	548
Solutions	
February 3401–3414	49
March 3415–3425	112
April 3425, 3426–3438	176
May 3440–3450	244
September TOTTEN-01 to TOTTEN-12	319
3451–3462	340
October 3439, 3463–3474	401
November 3475–3487	464
December 3488–3499	553
Miscellaneous	
Editorial	66
Editorial	258
The CRUX Open: Unsolved Problems in CRUX through Vol. 36	545
Year End Finale	568

Proposers and solvers appearing in the SOLUTIONS section in 2010:

Proposers

Anonymous Proposer 3525, 3566
Yakub N. Aliyev 3505, 3518
Arkady Alt 3556, 3570, 3571, 3585
G.W. Indika Amarasinghe 3590
Şefket Arslanagić 3584, 3592
Yahagn Aslanyan 3555, 3562
Ricardo Barroso Campos 3520
Michel Bataille 3514, 3529, 3532, 3545, 3546, 3553, 3574, 3575, 3591, 3594
Mihály Benoze 3534, 3561
K.S. Bhanu 3531
János Bodnár 3516
Paul Bracken 3500
N. Javier Buitrago Aza 3552
Cao Minh Quang 3526, 3533
Shai Govo 3586
M.N. Deshpande 3531
Max Diaz 3565
José Luis Díaz-Barrero 3502, 3515, 3539, 3547, 3572
A.A. Džumadžidževa 3573
Ovidiu Furdui 3512, 3530, 3550, 3551, 3578, 3580, 3600
Samuel Gómez Moreno 3536
Johan Gunardi 3558, 3597
Ignotus 3587
Walther Janous 3535
Hung Pham Kim 3508, 3509, 3527, 3549
Hiroshi Kinoshita 3528
Mikhail Kochetov 3563
Václav Konečný 3517, 3589
Panagiotis Ligouras 3582
Jian Liu 3569
Thanos Magkos 3559

Dorin Mărghidanu 3521, 3522
Marian Marinescu 3537
Dragoljub Milosević 3588
Cristinel Mortici 3599
Nguyen Duy Khanh 3519
Victor Oxman 3538
Pedro Henrique O. Pantoja 3506
Paolo Perfetti 3557, 3583, 3596
Pham Huu Duc 3507, 3554
Pham Van Thuan 3511, 3548, 3560, 3564
Cosmin Pohoată 3510, 3542
Pantelimon George Popescu 3539
Mariaia Rozhkova 3504
Josep Rubió-Massegú 3515
Sergey Sadov 3563
Mehmet Şahin 3543, 3544, 3576, 3577
Bill Sands 3595
Hassan A. ShahAli 3501, 3513
Bruce Shawyer 3503
Slavko Šimić 3523
D.J. Smeenk 3540, 3541
Zhi-min Song 3581
Albert Stadler 3567, 3568
Daryl Tingley 3593
Peter Y. Woo 3579
Li Yin 3581
Katsuhiko Yokota 3528
Zhang Yun 3598
Faruk Zeynelahi 3592
Titu Zvonaru 3524

Featured Solvers — Individuals

Anonymous Solver 3449
Arkady Alt 3421, 3423, 3443, 3450, 3459, 3462, 3470
Miguel Amengual Covas 3478
George Apostolopoulos 3410, 3453, 3454, 3457, 3460, 3465, 3479, 3487, 3489, 3490(b), 3491, 3495, 3499
Alberto Arenas Gómez 3406
Şefket Arslanagić 3432, TOTTEN-07
Roy Barbara 3416, 3428, 3452, 3497
Edward J. Barbeau 3477
Michel Bataille 3403, 3406, 3408, 3410, 3414, 3418, 3429, 3446, TOTTEN-05, 3473, 3481, 3482, 3494
Cao Minh Quang 3420, 3454
Chip Curtis 3409, 3411, TOTTEN-02, TOTTEN-09, 3473, 3498
Paul Deiermann 3430
Charles R. Diminnie 3431
Dung Nguyen Manh 3402, 3412, 3422, 3448, 3450
J. Chris Fisher TOTTEN-05
Ovidiu Furdui TOTTEN-03
Francisco Javier García Capitán 3467
Oliver Geupel 3404, 3405, 3413, 3419(a), 3420, 3424, 3427, 3428, 3429, 3433, 3444, TOTTEN-04, TOTTEN-06, TOTTEN-10, TOTTEN-12, 3468, 3481, 3483, 3484, 3490(a)
John Hawkins 3440

Richard I. Hess 3407, 3458
John G. Heuver TOTTEN-01, 3439, 3464
Joe Howard 3402, 3453, 3475
Peter Hurthig 3445
Salvatore Ingala 3477
Walther Janous TOTTEN-07
Václav Konečný 3434
Kee-Wai Lau 3410, 3455, 3469, 3496
Tom Leong 3458
Thanos Magkos 3448, 3450, 3462, 3466
Cristinel Mortici 3472
Paolo Perfetti 3486, 3488, 3495
Joel Schlosberg 3417, 3430, 3463, 3468, 3469
Harry Sedinger 3426
D.J. Smeenk 3496
Albert Stadler 3410, 3425, 3435, 3438, 3442, TOTTEN-11, 3451, 3458, 3489
David Stone 3440
Edmund Swylan 3434, TOTTEN-08, 3471
Panos E. Tsaousoglou 3450
Vo Quoc Ba Can 3419(a)
Peter Y. Woo 3401, 3410, 3456, 3476
Titu Zvonaru 3437

Featured Solvers — Groups

Missouri State University Problem Solving Group 3436, 3441
Hunedoara Problem Solving Group 3447

Other Solvers — Individuals

Anonymous Solver 3433
Mohammed Aassila 3459
Zafar Ahmed 3459
Yakub N. Aliyev 3424
Arkady Alt 3406, 3410, 3415, 3416, 3417, 3420, 3422, 3436, 3444, 3445, 3446, 3447, TOTTEN-04, TOTTEN-10, TOTTEN-11(a), TOTTEN-12, 3451, 3452, 3453, 3454, 3457, 3460, 3461, 3469, 3471, 3473(a), 3478, 3479, 3480, 3483, 3485, 3489, 3491, 3496(a), 3497, 3498
Miguel Amengual Covas 3411, 3436, 3439, 3475
George Apostolopoulos 3402, 3407, 3411, 3412, 3413, 3415, 3422, 3423, 3426, 3427, 3434, 3435, 3436, 3439, 3440, 3443, 3444, 3445, 3446, 3447, 3450, TOTTEN-04, TOTTEN-05, TOTTEN-08, TOTTEN-11, TOTTEN-12, 3451, 3452, 3454, 3456, 3458, 3459, 3461, 3462, 3463, 3464, 3465, 3467, 3469, 3470, 3472, 3473, 3475, 3476, 3478, 3481, 3485, 3494, 3496, 3497, 3498

Michele Arnold 3452
Şefket Arslanagić 3402, 3407, 3411, 3412, 3420, 3421, 3422, 3426, 3435, 3436, 3439, 3443, 3444, 3445, 3446, 3450, TOTTEN-08, TOTTEN-11(a), TOTTEN-12, 3453, 3454, 3460, 3461, 3464, 3469, 3473(a), 3478, 3485, 3495, 3497
Matthew Babbitt 3402, 3407
Dionne T. Bailey 3402, 3452, 3478, 3489, 3496
Roy Barbara 3402, 3406, 3407, 3411, 3420, 3422, 3426, 3427, 3430, 3432, 3434, 3435, 3436, 3440, 3441, 3446, 3447, TOTTEN-04, TOTTEN-10, TOTTEN-11, 3468, 3469, 3473(a), 3475, 3477, 3478, 3479, 3496
Edward J. Barbeau 3479
Cătălin Barbu 3471
Ricardo Barroso Campos 3402, 3403, 3426, 3429, 3436, 3439, 3463

Michel Bataille 3401, 3402, 3404, 3405, 3407, 3409, 3411, 3415, 3416, 3417, 3420, 3424, 3426, 3427, 3430, 3431, 3432, 3433, 3434, 3435, 3436, 3439, 3440, 3444, 3445, 3447, 3448, 3450, TOTTEN-01, TOTTEN-02, TOTTEN-04, TOTTEN-08, TOTTEN-10, TOTTEN-11(a), 3451, 3452, 3453, 3454, 3455, 3456, 3457, 3458, 3460, 3463, 3464, 3467, 3469, 3470, 3471, 3472, 3475, 3476, 3477, 3478, 3479, 3480, 3483, 3485, 3489, 3496, 3498
Jesi Bayless 3452
Brian D. Beasley 3416, 3426, 3478, 3479, 3498
Francisco Bellot Rosado 3439
Mihály Bencze 3402, 3411, 3420, 3446, 3447, TOTTEN-12
Mihăela Blanariu 3469, 3470
Paul Bracken 3420, 3422, 3433, TOTTEN-04, TOTTEN-07, 3451, 3473(a), 3478, 3485
Scott Brown 3452, 3453, 3460
Elias C. Buisant des Amorie 3496(a)
Elsie M. Campbell 3402, 3452, 3478, 3489, 3496
Cao Minh Quang 3402, 3406, 3410, 3412, 3415, 3421, 3422, 3423, 3436, 3443, 3444, 3445, 3478, 3483
Bao Changjin 3479
Chip Curtis 3402, 3406, 3407, 3408, 3410, 3412, 3415, 3416, 3418, 3420, 3421, 3422, 3426, 3428, 3429, 3431, 3435, 3436, 3438, 3440, 3445, 3446, 3447, 3450, TOTTEN-08, TOTTEN-11(a), 3451, 3452, 3453, 3454, 3455, 3458, 3460, 3461, 3463, 3464, 3475, 3477, 3478, 3479, 3481, 3482, 3485, 3487, 3489, 3490(b), 3491, 3496
Paul Deermann 3416
Calvin Deng 3479
Joseph DeVincentis 3468
José Luis Díaz-Barrero 3406, 3409, 3418, 3427, 3448, 3451, 3465, 3482, 3489, 3498
Charles R. Diminnie 3402, 3417, 3420, 3426, 3430, 3431, 3452, 3477, 3478, 3489, 3496, 3498
Marian Dincă 3467, 3471
Dung Nguyen Manh 3410, 3415, 3421, 3443, 3444, 3445, 3478, 3480
Keith Ekblaw 3469
Aaron Essner 3478
Mark Farrenburg 3478
Oleh Fayshteyn TOTTEN-11(a), 3475, 3478, 3481, 3485
Hidetoshi Fukugawa 3440
Ovidiu Furdui TOTTEN-02, TOTTEN-03, 3465, 3469, 3470
Francisco Javier García Capitán 3401, 3410, 3418, TOTTEN-04
Oliver Geupel 3401, 3402, 3403, 3406, 3407, 3409, 3410, 3411, 3412, 3414, 3415, 3416, 3417, 3418, 3421, 3422, 3426, 3430, 3431, 3432, 3434, 3435, 3436, 3437, 3439, 3440, 3441, 3442, 3443, 3445, 3446, 3447, 3448, 3450, TOTTEN-01, TOTTEN-02, TOTTEN-03, TOTTEN-05, TOTTEN-08, TOTTEN-09, TOTTEN-11(a), 3451, 3452, 3453, 3454, 3455, 3456, 3457, 3458, 3459, 3460, 3462, 3463, 3464, 3465, 3466, 3467, 3469, 3470, 3471, 3472, 3473, 3475, 3476, 3477, 3478, 3479, 3482, 3485, 3486, 3488, 3489, 3490(b), 3491, 3495, 3496, 3498, 3499
Douglas L. Grant 3452
Miguel Grau-Sánchez 3406, 3448
Luke E. Harmon 3478
John Hawkins 3426, 3428, 3436, 3438
José Hernández Santiago 3426
Richard I. Hess 3402, 3406, 3416, 3420, 3422, 3426, 3435, 3436, 3438, 3440, 3441, 3442, 3452, 3465, 3469, 3470, 3473, 3478
John G. Heuver 3402, 3403, 3414, 3436, 3443, 3452, 3463, 3475, 3496
Richard Hoshino TOTTEN-08, TOTTEN-09, 3454
Joe Howard 3406, 3410, 3425, 3443, 3444, 3445, 3450, TOTTEN-11(a), 3452, 3454, 3473(a), 3478, 3481, 3483, 3485, 3496, 3497
Peter Hurthig 3440, 3444
Salvatore Ingala 3454
Bianca-Teodora Iordache 3480
Walther Janous 3402, 3404, 3406, 3407, 3410, 3411, 3412, 3417, 3420, 3422, 3426, 3427, 3430, 3432, 3433, 3435, 3436, 3437, 3440, 3442, 3443, 3444, 3445, 3446, 3447, 3448, 3450, TOTTEN-01, TOTTEN-04, TOTTEN-08, TOTTEN-09, TOTTEN-10, TOTTEN-11(a), TOTTEN-12, 3451, 3452, 3453, 3454, 3455, 3457, 3458, 3460, 3461, 3462, 3463, 3464, 3465, 3467, 3469, 3470, 3471, 3472, 3473(a), 3478, 3479, 3480, 3481, 3482, 3483, 3486, 3488, 3489, 3491, 3495, 3496, 3497, 3498
Iyung Michelle Jung 3442
Geoffrey A. Kandall 3475
Sung Soo Kim 3442
Gerhard Kirchner 3467
Václav Konečný 3401, 3402, 3429, 3436, 3440, 3441, 3475, 3476, 3497
Kee-Wai Lau 3402, 3406, 3407, 3408, 3411, 3412, 3422, 3426, 3432, 3436, 3443, 3444, 3445, 3447, 3450, 3453, 3454, 3465, 3466, 3472, 3473, 3478, 3481, 3497
Tuan Le 3466, 3467
Tom Leong TOTTEN-04, TOTTEN-06, TOTTEN-09, 3452, 3457, 3465
Kathleen E. Lewis 3407, 3440

Joshua Long 3452
Sotiris Louridas 3462
Cezar Lupu 3415
Phil McCartney 3478, 3485
Thanos Magkos 3410, 3426, 3436, 3443, 3444, 3445(a), TOTTEN-08, TOTTEN-11(a), 3453, 3454, 3461, 3470, 3471
Salem Malikic 3412, 3420, 3421, 3422, 3432, 3436, 3443, 3446, 3450, 3497
David E. Manes 3406, 3407, 3412
Dorin Măghidanu 3491
D.P. Mehendale 3499
Georges Melki 3440
Dragoljub Milosevic 3435, 3436, 3443, 3445, 3450, 3478, 3485
M.R. Modak 3402, 3406, 3407, 3408, 3414, 3415, 3416, 3420, 3464, 3475, 3476, 3477, 3478, 3479, 3483, 3499
Cristinel Mortici 3402, 3426, 3435, 3436, 3439, 3440, 3445, 3446, 3447, 3450, 3465, 3467, 3469, 3470, 3471, 3475, 3479, 3480
Troy Mulholland 3426
Morten H. Nielsen 3499
José H. Nieto 3402, 3406, 3407
Moubinool Omarjee 3469, 3470
Victor Pambuccian 3497
Pedro Henrique O. Pantoja 3452, 3467, 3469
Michael Parmenter 3426
Paolo Perfetti 3354, 3466, 3467, 3469, 3470, 3473, 3478, 3479, 3480, 3489, 3491
Phan Huu Duc 3437, 3486, 3488
Cosmin Pohoată 3495
Pantelimon George Popescu 3418, TOTTEN-01
John Postl 3452
Bernardo Recamán 3468
Daniel Reisz 3440
Juan-Bosco Romero Márquez 3402, TOTTEN-04, 3469, 3470, 3478
Xavier Ros 3465, 3472
Michael Rozenberg 3490(b)
Josep Rubió-Massegú 3482
Peter Saltzman 3468
Bill Sands TOTTEN-06
Joel Schlosberg 3402, 3406, 3407, 3416, 3420, 3426, 3431, 3433, 3435, 3436, 3439, 3440, 3446, 3447, 3448, TOTTEN-09, 3452, 3464, 3470, 3475, 3478, 3479
Jonathan Schneider 3479
Mosca Sebastiano 3439
Bob Serkey 3402, 3478
Bruce Sawyer 3434, 3458
Slavko Simic 3408
Tigran Sloyan 3401
D.J. Smeenk 3403, 3411, 3414, 3439, TOTTEN-10, 3452
Digby Smith 3407, 3426
Albert Stadler 3401, 3402, 3405, 3406, 3407, 3408, 3411, 3412, 3413, 3415, 3416, 3417, 3418, 3420, 3422, 3423, 3426, 3428, 3430, 3431, 3433, 3434, 3436, 3437, 3440, 3441, 3443, 3444, 3445, 3446, 3447, 3448, 3449, TOTTEN-02, TOTTEN-03, TOTTEN-04, TOTTEN-06, TOTTEN-09, TOTTEN-10, 3452, 3453, 3454, 3457, 3465, 3469, 3470, 3473(a), 3477, 3478, 3479, 3482, 3485, 3486, 3487, 3488, 3494, 3496, 3497, 3498
David R. Stone 3426, 3428, 3436, 3438
Ercole Suppa 3439
Edmund Swylan 3420, 3424, 3426, 3429, 3439, 3440, 3441, 3452, 3458, 3460, 3463, 3475, 3478, 3496, 3497
Vasile Teodorovici 3402, 3407, 3452
Tran Quang Hung 3460, 3461
Salvatore Tringali 3426
Panos E. Tsanouoglou 3440, 3443, 3445, 3452, 3454, 3478, 3481, 3485, 3496(a)
George Tsintsifas 3497
Jan Verster 3496
Vo Quoc Ba Can 3413, 3437
Stan Wagon 3443, 3444, 3445(b), 3468, 3467, 3496
Haohao Wang 3452, 3478, 3479
Wei-Dong 3450
Luke Westbrook 3478
Jerzy Wojdylo 3452, 3478, 3479
Peter Y. Woo 3402, 3403, 3404, 3405, 3407, 3411, 3412, 3414, 3415, 3420, 3421, 3422, 3423, 3439, 3440, 3441, 3445, 3447, 3450, TOTTEN-01, TOTTEN-05, TOTTEN-10, TOTTEN-12, 3452, 3453, 3455, 3459, 3460, 3461, 3463, 3464, 3467, 3469, 3470, 3471, 3475, 3478, 3480, 3481, 3483, 3496(a), 3497, 3499
Konstantine Zelator 3402, 3411, 3426, 3436, 3452, 3464, 3475
Titu Zvonaru 3402, 3410, 3411, 3414, 3415, 3420, 3422, 3426, 3435, 3436, 3440, 3443, 3444, 3445, 3450, TOTTEN-08, 3459, 3461, 3464, 3471, 3475, 3478, 3479, 3485, 3495, 3496

Other Solvers — Groups

Hunedoara Problem Solving Group 3439, 3440, 3441, 3443, 3444, 3445, 3450

Missouri State University Problem Solving Group 3426, 3428, 3431, 3440, 3442, 3499
Skidmore College Problem Solving Group 3458, 3478