IBM

Ponder This

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July 2013

Ponder This Challenge:

When you roll three octahedron (eight sided) dice with the sides numbered 1, 4, 16, 64, 256, 1024, 4096, 16384, there are 120 different sums which can be produced. The maximal value, in this example, is 16384.

Find the eight positive integers that could number a octahedral die and minimize the maximum value of the eight faces, while still resulting in 120 possible sums when three of the dice are rolled.

Update 7/5: Many of you gave a solution of 219, which is not optimal; hint: don't be greedy.

We will post the names of those who submit a correct, original solution! If you don't want your name posted then please include such a statement in your submission!

We invite visitors to our website to submit an elegant solution. Send your submission to the ponder@il.ibm.com.

If you have any problems you think we might enjoy, please send them in. All replies should be sent to: ponder@il.ibm.com

Challenge: 06/28/2013 @ 01:00 PM EST
Solution: 08/01/2013 @ 01:00 PM EST
List Updated: 08/05/2013 @ 01:00 PM EST

People who answered correctly:

Hugo Pfoertner (06/30/2013 08:23 AM EDT)
Florian Fischer (06/30/2013 02:41 PM EDT)
Antoine Comeau (06/30/2013 09:36 PM EDT)
Don Dodson ((07/01/2013 05:00 AM EDT) EDT)
Rogerio Ponce da Silva (07/01/2013 11:08 AM EDT)
Arthur Vause (07/01/2013 11:02 AM EDT)
Hakan Summakoglu (07/01/2013 01:29 PM EDT)
Alan Murray (07/01/2013 03:55 PM EDT)
David Friedman (07/01/2013 04:03 PM EDT)
Rob Sessions (07/01/2013 08:28 PM EDT)
Todd Will (07/01/2013 08:55 PM EDT)
Shirish Chinchalkar (07/02/2013 06:10 AM EDT)
Joseph DeVincentis (07/02/2013 06:24 AM EDT)
János Kramár (07/02/2013 07:47 AM EDT)
Armin Krauss (07/02/2013 08:18 AM EDT)
David Greer (07/02/2013 02:10 PM EDT)
Todd Will (07/02/2013 12:38 PM EDT)
Reiner Martin (07/02/2013 02:17 PM EDT)
Hubert Kahlert (07/02/2013 03:03 PM EDT)
Dezhi Zhao (07/02/2013 04:36 PM EDT)
Peter Gerritson (07/02/2013 08:08 PM EDT)
Álvaro Begué (07/02/2013 09:25 PM EDT)
Vladimir Sedach (07/02/2013 11:55 PM EDT)
Liubing Yu (07/03/2013 12:36 AM EDT)
Radu-Alexandru Todor & Andreas Razen (07/03/2013 04:56 AM EDT)
John Tromp (07/03/2013 08:39 AM EDT)
Rogerio Ponce da Silva (07/03/2013 08:55 AM EDT)
Peter Holdsworth (07/03/2013 08:59 AM EDT)
Stéphane Higueret (07/03/2013 09:16 AM EDT)
Philippe Fondanaiche (07/03/2013 11:13 AM EDT)
Michael Leung & Benjamin Greenlay (07/03/2013 11:20 AM EDT)
Ed Pegg Jr (07/03/2013 01:37 PM EDT)
I. J. Kennedy (07/03/2013 02:11 PM EDT)
Duane Bailey (07/03/2013 03:16 PM EDT)
Darin Yu (07/03/2013 03:28 PM EDT)
Franza Cavalcante Jr (07/03/2013 06:51 PM EDT)
Henry Liu (07/03/2013 08:23 PM EDT)
Eric Harley (07/03/2013 08:39 PM EDT)
Wanxin Yuan (07/04/2013 01:10 AM EDT)
Leandro Araújo (07/04/2013 02:27 AM EDT)
Andreas Stiller (07/04/2013 11:05 AM EDT)
José Eduardo Gaboardi de Carvalho (07/04/2013 12:00 PM EDT)
Harald Bögeholz (07/05/2013 09:53 AM EDT)
Rami Pearl (07/06/2013 04:48 AM EDT)
Frank Mullin (07/06/2013 02:05 PM EDT)
Daniel Bitin (07/06/2013 04:19 PM EDT)
Ted Alper (07/07/2013 04:03 AM EDT)
Antonio García Astudillo (07/07/2013 04:47 AM EDT)
Tilmann Steinberg (07/07/2013 04:59 AM EDT)
Tony Harrison (07/07/2013 02:47 PM EDT)
Olivier Mercier (07/07/2013 09:02 AM EDT)
Dieter Beckerle (07/07/2013 11:07 AM EDT)
John Tromp (07/07/2013 04:24 PM EDT)
Yiting Ying (07/07/2013 07:52 PM EDT)
Cameron Byer (07/08/2013 06:42 AM EDT)
Dan Ismailescu (07/08/2013 07:14 AM EDT)
Mark Pervovskiy (07/08/2013 01:50 PM EDT)
Rob Pratt (07/08/2013 09:52 PM EDT)
Kai Wang (07/08/2013 11:32 PM EDT)
Paul Shaw & Philippe Laborie (07/09/2013 02:02 AM EDT)
Amos Guler (07/09/2013 11:35 AM EDT)
Steven Lu (07/09/2013 12:40 PM EDT)