

Hidden Discoveries Preliminary Round
 08-09 School Year
RESULT

I. Thanks.

I like to take this moment to thank all the students, parents, teachers, coaches, and other people who were part of this exam. This exam could've been just an idea without all of your help. It is very amazing that there are people like you to help the young students to constantly compete in numerous math competitions.

II. Cutoff

The cutoff was determined by taking top 30% of the total participants. There were 44 students participated in this exam so the top 30% would mean 13.2 students or technically, 14 students. But I decided to be more lenient on this because the student who scored 14th highest in this exam had a score of 115.5, which was higher than regular cutoff of 100. Furthermore, some scores repeated so instead of trying to take 14 students, I decided to take 14 *top scores* so that it would expand more.

As a result, the actual cutoff became 97.5, the 14th highest score among the contestants. This allowed the number of qualifying students to 24 instead of 14, and it was more realistic with the regular cutoff of 100.

Below is the grade distribution in this exam. I have also included list of all the scores (without names so privacy is respected). Then, I have calculated mean and standard deviation (I don't think we need anything beyond that since we're not comparing results) and built the chart.

Then, the following data shows the distribution of participants by location. There were total of three countries participating in this exam, including United States. Within United States, I have counted number of students by the states. This data is ordered merely by alphabetical sequence. I have decided not to include the list of schools because this is still part of private data.

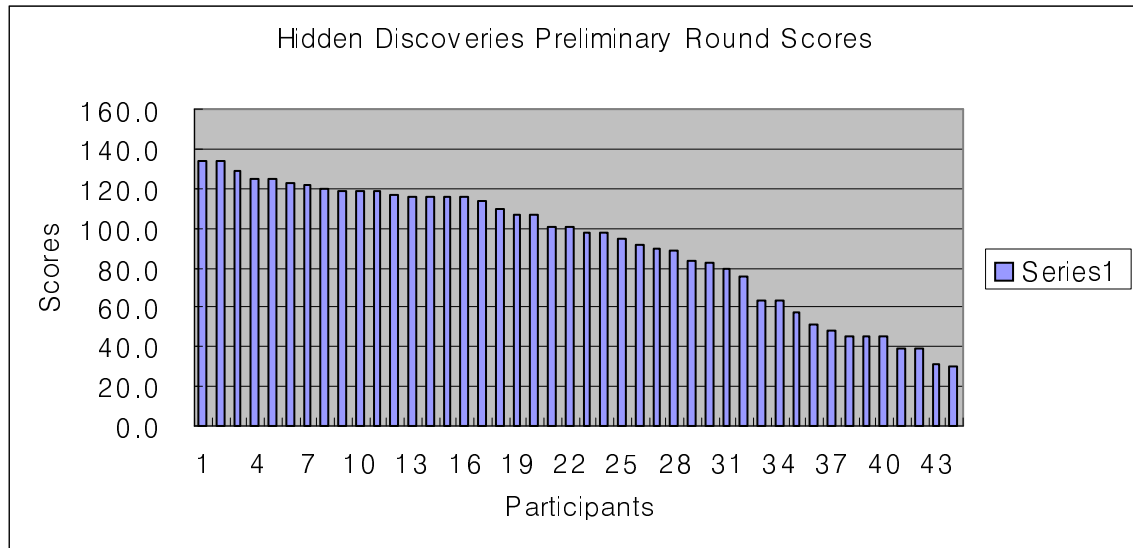
The last and yet probably the biggest thing of all is the problem distribution. That is, how many people chose certain choices in each problem. This took the most amount of time by far in this statistical analysis, and number 20 turned out to be THE most difficult problem since most people chose not to answer. I'll let you to look at the problem distribution in your own.

Those who sent the answers after 11:59:59 EST were counted as qualifiers but not as statistics. I meant to be clear that only EST time counted but I forgot to do so, and as a result, I decided to include those who took exam in Pacific Time period.

Grade	# Taken	# Qualified	Percent Qualifying	
<9		2	1	50.00%
	9	8	2	25.00%
	10	5	3	60.00%
	11	19	11	58.00%
	12	10	7	70.00%

- 133.5
- 133.5
- 129.0
- 124.5
- 124.5
- 123.0
- 121.5
- 120.0
- 118.5
- 118.5
- 118.5
- 117.0
- 115.5
- 115.5
- 115.5
- 115.5
- 114.0
- 109.5
- 106.5
- 106.5
- 100.5
- 100.5
- 97.5
- 97.5
- 94.5
- 91.5
- 90.0
- 88.5
- 84.0
- 82.5
- 79.5
- 75.0
- 63.0
- 63.0
- 57.0
- 51.0
- 48.0
- 45.0
- 45.0
- 45.0
- 39.0
- 39.0
- 31.5
- 30.0

Mean 91.32954545
 Standard Deviation 31.17890881



Arizona	1
British Columbia (Canada)	1
California	1
Connecticut	2
Georgia	3
Indiana	1
Kansas	1
Latvia	2
Massachusetts	3
Minnesota	2
New Jersey	3
New York	2
Ohio	1
Ontario (Canada)	1
Oregon	5
Pennsylvania	13
Texas	1
Wisconsin	1

Problem 1	40		1		2		43
Problem 2	37	1	4	1			43
Problem 3	1	2	1	1	34	4	43
Problem 4	1	4	27	9	2		43
Problem 5	3	17	19	3		1	43
Problem 6	1	2	2	30	3	5	43
Problem 7	1	32	1		2	7	43
Problem 8		30		3		10	43
Problem 9	2	2	30		5	4	43
Problem 10	2		1	28	1	11	43
Problem 11		1	7	25	6	4	43
Problem 12	38			1	1	3	43
Problem 13		3	5	27		8	43
Problem 14	9	20	6		3	5	43
Problem 15	1	1	27	2	1	11	43
Problem 16	2	21	1			19	43
Problem 17	1	1	3		25	13	43
Problem 18	2	2	10	3	1	25	43
Problem 19		2	2	1	16	22	43
Problem 20	1	1			6	35	43
Problem 21		11	3	1	3	25	43
Problem 22	9	3		2	3	26	43
Problem 23			2		13	28	43
Problem 24		1	8		2	32	43
Problem 25	10	3	2	1	5	22	43