



2019 $F = ma$ Contest Results

In 2019 there were two $F = ma$ exams administered. The data from the exams are in the table below.

Exam	A (Jan 23)	B* (Jan 25)
Number of scored exams	3876	2343
Minimum score	1	1
Maximum score	25	24
Median score	8	9
Average score	9.09	9.95
Standard deviation	3.56	4.23

* There was a typo in problem 17 of Exam B. Students were given full credit for this problem.

In order to meet the goal of selecting the top students, of which approximately 400 are invited to take the USAPhO exam, it is necessary to set cutoffs that reflect the differences in the number of test takers of the two exams as well as the possible differences in the difficulty of the two exams.

As such, the minimum scores necessary to get an invitation to sit the 2019 USAPhO will be

- A score of **16** for Exam A (Jan 23)
- A score of **17** for Exam B (Jan 25)

For students who attempted both exams, they will be invited to take the USAPhO exam if they qualify for either Exam A or Exam B.