



2021 $F = ma$ Contest Results

In 2021 the $F = ma$ exam was administered from 4:00 pm to 6:00 pm US Eastern Time on Feb 18. The testing platform was provided by Art of Problem Solving. The data from the exam are in the table below.

Number of scored exams	3524
Minimum score	0
Maximum score	24
Median score	8
Average score	8.89
Standard deviation	3.91

Consistent with previous years, of which approximately 300 to 400 are invited to take the USAPhO exam, the minimum scores necessary to get an invitation to take the 2021 USAPhO will be:

- A score of **15** .

***NOTE:** Answers A and E in Problem 16 are both marked as correct. The spirit of the problem is for students to recognize that the particle's speed is asymptotically going to zero. We recognize also that due to the fact that asymptotic means that it takes infinite time to stop, then choice A, the intended answer, is incomplete in a much strict sense. Thus we are giving credits to students who either recognize the physical idea or recognize the subtlety of the behavior.*