2022 Guideline of IATP Scholarship

- Suppose there are N students in one class who are eligible for the scholarship. Based on the regulation, top 5% student(s) will receive 60k NTD, top 6~10% student(s) will receive 30k NTD, and top 11~20% student(s) will receive 20k NTD. The calculation will be given as follows:

  $T5 = N * 0.05$
  $T10 = N * 0.1 - T5$
  $T20 = N * 0.2 - T10 - T5$

- T5, T10 and T20 may not be integers so each number will be rounded as follows:

  $R5 = round(T5)$
  $R10 = round(T10)$
  $R20 = round(T20)$

- In the rare situation that $round(T5+T10+T20) > R5+R10+R20$, additional scholarship of 20k NTD will be given to the student(s) of the amount of $[round(T5+T10+T20) - (R5+R10+R20)]$

- Take N = 16 as an example:
  $T5 = 16 * 0.05 = 0.8$
  $T10 = 16 * 0.1 - T5 = 0.8$
  $T20 = 16 * 0.2 - T10 - T5 = 1.6$
  $R5 = 1$
  $R10 = 1$
  $R20 = 2$
  So the ranked 1 student will receive 60k NTD, ranked 2 student will receive 30k NTD, and the ranked 3 and 4 students will receive 20k NTD.
  It was expected that $round(T5+T10+T20) = 3$ students who should receive the scholarship. Due to rounding, there are actually $(R5+R10+R20) = 4$ students who received the scholarship. In this case, $round(T5+T10+T20) < R5+R10+R20$, so no more additional scholarship will be given to anyone else.

- Take N = 24 as another example:
  $T5 = 24 * 0.05 = 1.2$
  $T10 = 24 * 0.1 - T5 = 1.2$
  $T20 = 24 * 0.2 - T10 - T5 = 2.4$
  $R5 = 1$
  $R10 = 1$
  $R20 = 2$
  So the ranked 1 student will receive 60k NTD, the ranked 2 student will receive 30k NTD, and the ranked 3 and 4 students will receive 20k NTD.

However, it was expected that round(T5+T10+T20) = 5 students who should receive the scholarship. Due to rounding there are actually (R5+R10+R20) = 4 students who received the scholarship. In this case, round(T5+T10+T20) > R5+R10+R20, so additional scholarship of 20k NTD will be given to the student(s) of the amount of [round(T5+T10+T20) - (R5+R10+R20)] = 1. Therefore, the ranked 5 student will receive 20k NTD.

- For convenience, a table of scholarship recipients is given below:

N	T5	T10	T20	round(T5+T10+T20)	R5	R10	R20	R5+R10+R20	round(T5+T10+T20) > R5+R10+R20	round(T5+T10+T20) - (R5+R10+R20)	Ranking for 60k	Ranking for 30k	Ranking for 20k
1	0.05	0.05	0.1	0	0	0	0	0					
2	0.1	0.1	0.2	0	0	0	0	0					
3	0.15	0.15	0.3	1	0	0	0	0	TRUE	1			1
4	0.2	0.2	0.4	1	0	0	0	0	TRUE	1			1
5	0.25	0.25	0.5	1	0	0	1	1					1
6	0.3	0.3	0.6	1	0	0	1	1					1
7	0.35	0.35	0.7	1	0	0	1	1					1
8	0.4	0.4	0.8	2	0	0	1	1	TRUE	1			1,2
9	0.45	0.45	0.9	2	0	0	1	1	TRUE	1			1,2
10	0.5	0.5	1	2	1	1	1	3			1	2	3
11	0.55	0.55	1.1	2	1	1	1	3			1	2	3
12	0.6	0.6	1.2	2	1	1	1	3			1	2	3
13	0.65	0.65	1.3	3	1	1	1	3			1	2	3
14	0.7	0.7	1.4	3	1	1	1	3			1	2	3
15	0.75	0.75	1.5	3	1	1	2	4			1	2	3,4
16	0.8	0.8	1.6	3	1	1	2	4			1	2	3,4
17	0.85	0.85	1.7	3	1	1	2	4			1	2	3,4
18	0.9	0.9	1.8	4	1	1	2	4			1	2	3,4
19	0.95	0.95	1.9	4	1	1	2	4			1	2	3,4
20	1	1	2	4	1	1	2	4			1	2	3,4
21	1.05	1.05	2.1	4	1	1	2	4			1	2	3,4
22	1.1	1.1	2.2	4	1	1	2	4			1	2	3,4

N	T5	T10	T20	round(T5+T10+T20)	R5	R10	R20	R5+R10+R20	round(T5+T10+T20) > R5+R10+R20	round(T5+T10+T20) - (R5+R10+R20)	Ranking for 60k	Ranking for 30k	Ranking for 20k
23	1.15	1.15	2.3	5	1	1	2	4	TRUE	1	1	2	3,4,5
24	1.2	1.2	2.4	5	1	1	2	4	TRUE	1	1	2	3,4,5
25	1.25	1.25	2.5	5	1	1	3	5			1	2	3,4,5
26	1.3	1.3	2.6	5	1	1	3	5			1	2	3,4,5
27	1.35	1.35	2.7	5	1	1	3	5			1	2	3,4,5
28	1.4	1.4	2.8	6	1	1	3	5	TRUE	1	1	2	3,4,5,6
29	1.45	1.45	2.9	6	1	1	3	5	TRUE	1	1	2	3,4,5,6
30	1.5	1.5	3	6	2	2	3	7			1,2	3,4	5,6,7
31	1.55	1.55	3.1	6	2	2	3	7			1,2	3,4	5,6,7
32	1.6	1.6	3.2	6	2	2	3	7			1,2	3,4	5,6,7
33	1.65	1.65	3.3	7	2	2	3	7			1,2	3,4	5,6,7
34	1.7	1.7	3.4	7	2	2	3	7			1,2	3,4	5,6,7
35	1.75	1.75	3.5	7	2	2	4	8			1,2	3,4	5,6,7,8
36	1.8	1.8	3.6	7	2	2	4	8			1,2	3,4	5,6,7,8
37	1.85	1.85	3.7	7	2	2	4	8			1,2	3,4	5,6,7,8
38	1.9	1.9	3.8	8	2	2	4	8			1,2	3,4	5,6,7,8
39	1.95	1.95	3.9	8	2	2	4	8			1,2	3,4	5,6,7,8
40	2	2	4	8	2	2	4	8			1,2	3,4	5,6,7,8
41	2.05	2.05	4.1	8	2	2	4	8			1,2	3,4	5,6,7,8
42	2.1	2.1	4.2	8	2	2	4	8			1,2	3,4	5,6,7,8
43	2.15	2.15	4.3	9	2	2	4	8	TRUE	1	1,2	3,4	5,6,7,8,9
44	2.2	2.2	4.4	9	2	2	4	8	TRUE	1	1,2	3,4	5,6,7,8,9
45	2.25	2.25	4.5	9	2	2	5	9			1,2	3,4	5,6,7,8,9
46	2.3	2.3	4.6	9	2	2	5	9			1,2	3,4	5,6,7,8,9
47	2.35	2.35	4.7	9	2	2	5	9			1,2	3,4	5,6,7,8,9
48	2.4	2.4	4.8	10	2	2	5	9	TRUE	1	1,2	3,4	5,6,7,8,9,10

N	T5	T10	T20	round(T5+T10+T20)	R5	R10	R20	R5+R10+R20	round(T5+T10+T20) > R5+R10+R20	round(T5+T10+T20) - (R5+R10+R20)	Ranking for 60k	Ranking for 30k	Ranking for 20k
49	2.45	2.45	4.9	10	2	2	5	9	TRUE	1	1,2	3,4	5,6,7,8,9,10
50	2.5	2.5	5	10	3	3	5	11			1,2,3	4,5,6	7,8,9,10,11
51	2.55	2.55	5.1	10	3	3	5	11			1,2,3	4,5,6	7,8,9,10,11
52	2.6	2.6	5.2	10	3	3	5	11			1,2,3	4,5,6	7,8,9,10,11
53	2.65	2.65	5.3	11	3	3	5	11			1,2,3	4,5,6	7,8,9,10,11
54	2.7	2.7	5.4	11	3	3	5	11			1,2,3	4,5,6	7,8,9,10,11
55	2.75	2.75	5.5	11	3	3	6	12			1,2,3	4,5,6	7,8,9,10,11,12
56	2.8	2.8	5.6	11	3	3	6	12			1,2,3	4,5,6	7,8,9,10,11,12
57	2.85	2.85	5.7	11	3	3	6	12			1,2,3	4,5,6	7,8,9,10,11,12
58	2.9	2.9	5.8	12	3	3	6	12			1,2,3	4,5,6	7,8,9,10,11,12
59	2.95	2.95	5.9	12	3	3	6	12			1,2,3	4,5,6	7,8,9,10,11,12
60	3	3	6	12	3	3	6	12			1,2,3	4,5,6	7,8,9,10,11,12