Team formation:
To compete you should be a team of three students enrolled in the same institution. You may bring with you as much printed material as you like (books, old codes you have developed, course notes, etc.), but no electronic device will be allowed. That means that any laptop, phone, smartwatch, iphone, USB drive or any other form of media will not be allowed on the competition floor.

The problem set:
The problem set will vary in difficulty. **The problems are NOT presented in order of difficulty.** You may solve your problems in any order you want, and each problem awards you with the same amount of points. More about grading later.

Submitting:
After reading a problem statement, if you decide to approach it, you should code your solution in one of the accepted languages (C, C++, Java or Python). After you test your solution in your computer, and think that it is correct, you may submit your code for judging. Upon receiving your code the automatic system will:

1. Compile your code (if not in Python)
2. Execute your code with a prepared set of hard input (that are hidden from the contestants)
3. Compare the output your program generated with the expected output.

Note that an automatic judge will do this; no human will read your code. After the judging (usually a few seconds, but may be more depending on the judging queue) you will receive a verdict, which can be:

- **NO - Compilation Error** - Your code didn’t compile
- **NO - Time Limit Exceeded** - Your code took longer to run than the allowed time limit
- **NO - Wrong Answer** - Your code ran in time, but it output a wrong solution for at least one of the test cases.
- **NO - Runtime Error** - Your code ran into a runtime error, for instance, a division by 0, or a syntax error in the case of Python.
- **YES** - Your code compiled and ran correctly, and output a correct answer.
- **NO - Other (Please see staff)** - unpredictable things can happen and we have to be prepared.
We will be using the system PC2 for controlling the contest. You are encouraged to read their manual at http://www.ecs.csus.edu/pc2/doc/v9/PC2V9TeamGuide.pdf

**Scoring:**
The first criterion for scoring is the total number of problems with a **YES** verdict. If team A solved 4 problems and team B solved 3 problems, team A will be ahead of team B in the ranking, regardless of which problems they solved, and of the time it took them.

The tie breaking is done by considering the “penalty”. Penalty has two components:

1. You will receive a penalty of 20 for each “NO” submission of a problem you eventually solve. If you don’t eventually solve the problem, you won’t be penalized for wrong submissions.
2. If you receive a “YES” on a problem X minutes after the competition started, you will receive a penalty of X.

In case of ties in number of problems, teams will be ranked by smallest penalties. In the unlikely case of ties in both number or problems and penalties, the judges may decide to make a (subjective) determination based on the quality of the submitted code.

**Clarifications:** In case of ambiguity in a problem statement, you may ask for a clarification through the PC2 system. Clarifications go to the judge anonymously and are completely free. As a rule of thumb, in case of doubt, ask for a clarification. In the worst case, you will receive back something that is not helpful.

**At your station you will have at your disposal:**

- One computer (note that there will be only one computer per team of three people)
- Three copies of the problem set, printed. These copies are yours to keep, and you can write on them as you will.
- One calculator
- Sheets of paper and pens.

Apart from that, you will be able to print anything you want (for instance, to analyze code while another team member is working on another problem on the computer). You are **not** allowed to use the Internet, however.

**Some Quick Hints**

- For editing, you have many choices, including
  - gedit: a simple to use graphical editor. Can be started from a terminal window.
  - Eclipse: a complete programming environment. Should be in sidebar.
  - vi: old school...

You can ask a staff member for help with these.
• If you need to go to the bathroom, please ask one of the attendants to accompany you.
• Clarifications can be submitted through pc2team. This is preferred over asking attendants.
• All programs should read from standard input and write to standard output.
• There is a running time limit of 5 seconds on each solution, which should be plenty.
• Until 30 minutes before the end of the contest (or until we run out of helium or balloons),
you will get a balloon for each solved problem, in a color that corresponds to the problem
you solved. The colors of the problems are not disclosed, so unless you have a balloon
of the same color you cannot tell which problems other teams have solved.
• The progress of other teams (in terms of score) can also be seen on the scoreboards
until 30 minutes before the end.

Each solution takes a single input (read from standard input), and produces a single output
(written to standard output). Often the input file will contain multiple test cases. For example, if
the problem is to some up a list of integers, the input might look like:

```
3
2 5 4
4 2 1
3 3 3
```

And the output in this case might be something like

```
11
7
9
```

Spaces, new-lines, etc. are generally ignored except to delimit the input fields. Read the
instructions carefully to understand the format of the input and output. We provide for each
problem at least one sample input and output.