**2014 North Central Regional Programming Contest**

 **Notes on the Problem Set**

**And Judging Guidelines**

1. Judging will be done using a file compare. Most problems have output that looks like

Case 1: answer goes here

This is the word “Case”, a space, the number of the case (starting at 1), a colon, a space, and the answer for that case with no trailing spaces. A solution that is not in the required format but has the correct answers will be rejected as a presentation error. This includes format errors such as extra spaces, not capitalizing the word “Case”, and not counting the cases starting at 1. We will continue to allow a blank line at the end of the output file as we always have, but other extra spaces will lead to a presentation error.

2. Solutions should run very quickly (less than one second) problems A, B, D, E, F, G and H, and in 5 seconds or less for problems C, and I. Time limits for problems A, B, D, E, F, G and H will be ten (10) seconds, and for problems C and I the time limits will be 60 seconds. Recognizing that all computers are different but still needing to apply some absolute standard, these time limits are already set well beyond what should be expected, so **please do NOT allow additional time** (though out of curiosity judges may check to see how much longer a solution might take.)

3. Problems are designed so that reasonable algorithms will not need integers that are more than 64 bits.

4. Input for all problems will be valid within the statement of the problem. If the problem gives a range for a particular value, the value on input will be in that range. However, read problems carefully for cases for which your program is supposed to find a situation that makes the problem impossible to solve and report that as the result of the case.

5. Input for many problems will end with a value that indicates end of file. Do not process this input or anything that might be after it on the file. Printing results for this end-of-data flag and/or any data after it will be viewed as a presentation error.

6. Details of input format for some problems may be specified. However, unless it is specified by the problem statement, do not assume spacing in the input file will match the sample. In particular, unless not allowed by the problem statement, judges may add spaces to some input cases to make it easier for human beings to look at the input file such as having blank lines between cases or additional spaces before or after shorter values so that values line up visually, and so on. This will be done with numeric input. Problems with string inputs will have specific input formats that are given in the problem statement.

7. There may be multiple reasons for rejecting a solution. If this is the case, rather than simply picking the first reason that is spotted which can be very arbitrary and skew responses across the region, please follow the following order: 1: run-time, 2: time-limit, 3: wrong answer, 4: presentation. It may still not be all that easy to decide, but do your best – just make sure “presentation error” is chosen last. PC^2 provides a couple additional responses that are not on the authorized list. “Compilation Error” and “Other – Contact Staff” may be useful in some cases, particularly when the computers judges use might not be exactly the same as the teams. Resolving this MIGHT entail system administration help, and if the problem was the system, the response can be rescinded. “Excessive Output” is not to be used – instead use “Presentation Error”.

8. Anything that a solution outputs to stderr may be ignored. That is, teams may use stderr for debugging purposes and not have to clean up afterwards.