<div align="center">

(Projects)

(Each team may choose one of the projects below, and write down the
results in the corresponding answer sheets.)

</div>

First project:

Suppose the following persons were confirmed by supervision committee, for 10th president
Election in Khordad 1388. If you intend to predict the result of election beforehand,
Answer the following questions:

<div align="center">

Mahmoud Ahmadinezhad , Mohammad Jasbi
Gholamali Hadade-Adel , Mohammad Khatami
Mohammadreza Aaref , Mohammadbagher Ghalibaaf
Mehdi Karoubi , Aliakbar Velayati.

</div>

a) What is the population under investigation?
b) What is the sample space (result of each ballot)?
c) If your school's population includes 150 students in pre-college and 200 students in third grade, and you want to predict only through sampling from your school's students (that belongs to the population), how do you select a sample of 100 students?
d) Has this sample been a suitable one for your prediction?
e) Present an appropriate method of sampling to predict for selecting 100 students.
f) If you wait for performing the election by government and then study the results, from point of view of statistics what have you done?
g) How do you calculate the probability of the election of each candidate?

<div align="right">

[50 points]

</div>

Second project:

The marks of 30 students in calculus in academic year 86-87, which have been done globally, are as follows:

Sex	Marks												
Girl	11.1	16.8	12.2	12	13.9	11.2	12.5	8.9	17.5	16.9	16.7	11.8	13.1
	15.1	17.1	14.6	13.7	12.5	11.1	12.2	12	18.7	14.7	15.3	12	12.2
	17.3	17.1	16.1	15.6									
Boy	12.1	16.1	12.5	8.8	9.6	13.5	17.1	13.8	10.6	14.6	15.9	10.7	19.1
	18.6	11.2	13.5	15.5	16	12	11.8	16	11.2	11.8	17.5	16	20
	16.4	12	12.1	14.2									

a) Explain the methods of comparison between these 2 diagrams.

b) Accordingly to the data, how has been the execution of girl students with compare to boy students in math? (State your reason)

c) If the marks failed to have any specific standard (for example, if the marks had belonged to two different lessons), then what method do you propose?

[25 points]