

# Homework3

1. Depends on the data.
2. (a) If we have some outliers in the data, mean may not give a typical value of the data.  
For example data: 1,1,1,1,1,1,1000. Obviously the median is better here.  
(b) Because it is the arithmetic average of the data. For example data: 1,1,1,10,100,100,100  
The mean is better here.  
(c) The nationality of students. We can not use either of them.

3. Depends on different fields.

4. mean of women's goals is: 3.47

Mean of men's goals is: 2.30

Yes. It seems that women soccer have more goals.

Standard deviation of women's data is 2.33.

Standard deviation of men's data is 1.47.

Women's game has more variation.

| Men                  | women        |
|----------------------|--------------|
| 0000000              | 0   0        |
| 0000000000000000     | 1   0000     |
| 00000000000000000000 | 2   00000000 |
| 0000000000000000     | 3   00000    |
| 00000000000          | 4   000000   |
| 00                   | 5   00000    |
| 00                   | 6            |
| 7                    | 7   0        |
| 8                    | 8            |
| 9                    | 9   0        |
| 10                   | 10           |
| 11                   | 11   0       |