MATH 302 WORKSHEET 7 ½

1. A statistician is interested in the number of dates per week that people at KU report to have is somewhat similar to the number of dates on average of 'typical' undergraduate students at universities in the USA ($\mu_X = 4$ and $\sigma_X = 1$).. Random numbers were generated to get ID numbers for students at KU, then the subjects were asked to the number of dates for the past week they had. Thus, the researcher collected for a 'random' sample of people (32 students) at KU in the spring of 2011. The raw data is presented in the table below.

Sample Number of Dates	3 4 4 8 3 2 3 4 4 8 3 2 7 0 6 1 5 1 3 3 5 6 7 0 6 1 5 1 3 3 5 6

with 2 decimal place accuracy:

$\overline{X} \doteq 3.812$ S is computed but he lost it so he doesn't care what it is.

Assume the sample is from a normal population, the observations are independent, and there was no error of measurement of the quantity.

Now, based on this study the statistician is going to do a replication study. He will collect a 'random' sample of people (50 students) at KU in the spring of 2012. What is the approximate probability for that study $\overline{X}$ will be less than the previous study?

2. Another statistician also is interested in the number of dates per week that people at KU report to have is somewhat similar to the number of dates on average the number of dates on average of 'typical' undergraduate students at universities in the USA ($\mu_X = 4$ and $\sigma_X \neq 0$).. Random numbers were generated to get ID numbers for students at KU, then the subjects were asked to the number of dates for the past week they had. Thus, the researcher collected for a 'random' sample of people (32 students) at KU in the spring of 2011. The raw data is presented in the table below.

Sample Number of Dates	3 4 4 8 3 2 3 4 4 8 3 2 7 0 6 1 5 1 3 3 5 6 7 0 6 1 5 1 3 3 5 6

with 2 decimal place accuracy:

$\overline{X} \doteq 3.812$ $S \doteq 2.257$

Assume the sample is from a normal population, the observations are independent, and there was no error of measurement of the quantity.

Now, based on this study the statistician is going to do a replication study. She will collect a 'random' sample of people (60 students) at KU in the spring of 2012. What is the approximate probability for that study $\overline{X}$ will be less than the previous study?