PROBABILITY AND STATISTICS I BMA1104

ASSIGNMENT

1. The time taken by a number of scientist to complete a certain job is normally distributed with a mean of 150 minutes and a standard deviation of 30 minutes.
2. What is the probability that a randomly selected scientist will take more than 210 minutes to complete the job?
3. Calculate the probability that the selected scientist takes more than 90 minutes
4. A survey of enrollment at 35 community colleges across the United States yielded the following figures:

6414; 1550; 2109; 9350; 21828; 4300; 5944; 5722; 2825; 2044; 5481; 5200; 5853; 2750; 10012; 6357; 27000; 9414; 7681; 3200; 17500; 9200; 7380; 18314; 6557; 13713; 17768; 7493; 2771; 2861; 1263; 7285; 28165; 5080; 11622

1. Organize the data into a chart with five intervals of equal width. Label the two columns “Enrollment” and “Frequency.”
2. Construct a histogram of the data.
3. If you were to build a new community college, which piece of information would be more valuable: the mode or the mean?
4. Calculate the sample mean.
5. Calculate the sample standard deviation.
6. A school with an enrollment of 8000 would be how many standard deviations away from the mean?
7. The probabilities of events A and B are

, , . Find in terms of 

1. 
2. 
3. Find the value of  given that A and B are independent events.

1. At a certain airport, 80% of the flights arrive on time. A sample of 10 flights is studied. Let be the number of flights that arrive on time. Find
2. 
3. 
4. 
5. 
6. A random variable has the following probability distribution

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|  |  |  |  |  |  |  |  |  |

Find the following

1. The value of 
2. 
3. and 