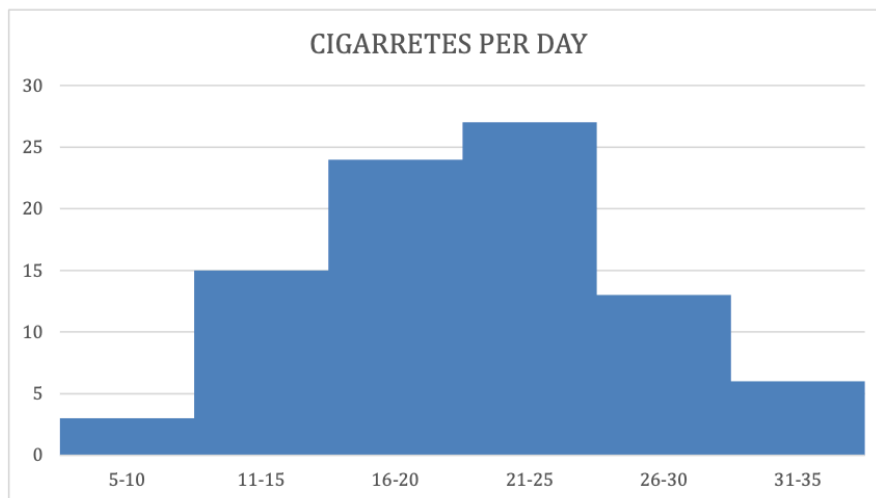


EXAM PROBLEMS:

- 1) Following histogram shows result of a survey hold among a group of 88 smokers concerning the average number of cigarettes smoked per day
- Describe shape, center and variability of the distribution
 - Which is the percentage of smokers consuming more than 25 cigarettes per day?
 - How many smokers from this sample smoke less than 16 cigarettes daily?



- 2) Considering following data distribution, using Excel:

0,4,4,5,5,5,6,6,6,6,7,7,8,9

- Calculate mean, median, and quartiles
 - Draw the boxplot
 - Is there any outlier? Why?
- 3) The scores of adults on a IQ test are approximately normal with mean 100 and standard deviation 15.
- What proportion of adults have an IQ below 90?
 - What proportion of adults have an IQ above 120?
 - What proportion of adults have IQ between 90 mm and 110 mm?
- 4) A manager of an e-commerce company would like to determine average delivery time of the products. A sample of 25 customers is taken. "The average delivery time in the sample was four days. Suppose the delivery times are normally distributed with a standard deviation of 1.2 days."
- Provide a 95 % confidence interval for the mean delivery time.
 - The manager claims that the average delivery time of their products does not exceed 3 days. Write the null and alternative hypothesis regarding to the claim of the manager.
 - Test the manager's claim
- 5) Sales of a car dealer during last year have been:
- January: 100 cars (Previous forecast 120)
February: 120 (Previous forecast 130)
March: 140 (Previous forecast 200)
April: 110 (Previous forecast 90)
May: 175
June: 200
July: 250
August: 80
September: 120
October: 120:
November: 150
December: 130
- Forecast the sales from May to August of present year using:
- Naïve approach
 - Moving averages
 - Exponential smoothing

6) Create your own correlation

- a. Invent two variables (can be a real example)
- b. Define which one is dependent and which independent
- c. Invent values
- d. Graph a scatterplot using Excel
- e. Graph the correlation line, find its equation and the index of correlation using Excel
- f. Give your conclusions