**Individual Assignment**

1. Suppose we have the following random sample of n=6 elements from a population whose parameter values are not known;

 4 10 11 13 16 and 18

Compute the following point estimates;

1. The estimate of the population mean
2. The estimate of the population standard deviation
3. The estimate of the standard error of the mean.
4. The estimate of the population proportion of even numbers.
5. The standard deviation of the amounts poured in to bottles by an automatic filing machine is 1.8 milli litters. The amounts of fill in a random sample of bottles in ml were:

418 479 482 480 477 478 481 482

Suppose the population of amount of fill is normal. Construct 90% confidence interval estimate for the mean amount in all bottles filled by the machine.

1. The quality-control manager of Vita Company examined a random sample of parts made during the three shifts that the company operates. The manager classified the parts as good or defective as shown in Table 7.8. Perform, at the 5 percent level, a test of the hypothesis that equal proportions of defective parts are made by the three shifts.

|  |  |
| --- | --- |
|  | Shift |
| **Day** | **Middle** | **Night** |
| Number of good parts | 427 | 273 | 240 |
| Number of defective parts | 23 | 27 | 10 |