Problem Statement 1:

You survey households in your area to find the average rent they are paying. Find the standard deviation from the following data:

$1550, $1700, $900, $850, $1000, $950.

Solution :

1. **Find the mean:**

   Average Rent = ($1550+$1700+$900+$850+$1000+$950)/6 = $1158.33

2. **Find Std deviation**
   - Subtract the mean values from the individual observations

     $1550- $1158.33 = $391.6667
     $1700- $1158.33 = $541.6667
     $900- $1158.33 = $-258.333
     $850- $1158.33 = $-308.333
     $1000- $1158.33 = $-158.333
     $950- $1158.33 = $-208.333
   - Square the differences

     $391.6667=$153402.8

     $541.6667 =$293402.8

     $-258.333 =$66736.11

     $-308.333=$95069.44

     $-158.333=$25069.44

     $-208.333=$43402.78

   - Add up the squares and divide by n-1 which is 5

     (153402.8+293402.8+66736.11+95069.44+25069.44+43402.78)/5 = 135416.7

   - Find the square root of result of previous step
     SQRT (135416.7) = 367.99

The standard deviation is 367.99.