D.  **Mean Center :**

the mean was discussed as an important measure of central tendency for a set of data. If this concept of central tendency is extended to locational point data in two dimensions (X and Y coordinates), the average location, called the mean center, can be determined. the only stipulation is that the phenomenon can be displayed graphically as a set of points in a two-dimensional coordinate system.

The directional orientation of the coordinate axes and the location of the origin are both arbitrary.

Once a coordinate system has been established and the coordinates of each point determined, the mean center can be calculated by separately averaging the X and Y coordinates, as follows:

$\overbar{x}$**=** $\frac{\sum\_{}^{}X\_{i}}{n}$ **,** $\overbar{Y}$**=** $\frac{\sum\_{}^{}Yi}{n}$

**where:**

𝑋̅= mean center of X

𝑌̅= mean center of Y

Xi = X coordinate of point i

Yi = Y coordinate of point i

n = number of points in the distribution

**for example\ Calculate the central mean of the following data**

|  |  |  |
| --- | --- | --- |
| **Point** | **Xi** | **Yi** |
| **A** | **61** | **33** |
| **B** | **80** | **20** |
| **C** | **10** | **18** |
| **D** | **12** | **14** |
| **E** | **20** | **12** |

**H.W\**

 **A- Calculate the central mean of The following points represent weather stations centers.**

|  |  |  |
| --- | --- | --- |
| **weather stations centers** | **X** | **Y** |
| **1** | **10** | **4** |
| **2** | **16** | **8** |
| **3** | **8** | **9** |
| **4** | **24** | **12** |
| **5** | **18** | **16** |
| **6** | **28** | **13** |
| **7** | **11** | **10** |
| **8** | **30** | **20** |

**B\ find the weighted mean center for the following data:**

|  |  |
| --- | --- |
| **weather stations centers** | **Weight** |
| **1** | **1** |
| **2** | **3** |
| **3** | **3** |
| **4** | **2** |
| **5** | **4** |
| **6** | **5** |
| **7** | **2** |
| **8** | **5** |