ASSIGNMENT - STATISTICS

Find the mean deviation about the mean for the following data:

1. 7, 8, 4, 13, 9, 5, 16, 18
2. 39, 72, 48, 41, 43, 55, 60, 45, 54, 43
3. 17, 20, 12, 13, 15, 16, 12, 18, 15, 19, 12, 11

Find the mean deviation about the median for the following data:

4. 12, 5, 14, 6, 11, 13, 17, 8, 10
5. 4, 15, 9, 7, 19, 13, 6, 21, 8, 25, 11
6. 34, 23, 46, 37, 40, 28, 32, 50, 35, 44
7. 70, 34, 42, 78, 65, 45, 54, 48, 67, 50, 56, 63

Find the mean deviation about the mean for the following data:

8.

x_i	6	12	18	24	30	36
f_i	5	4	11	6	4	6

9.

x_i	2	5	6	8	10	12
f_i	2	8	10	7	8	5

10.

x_i	3	5	7	9	11	13
f_i	6	8	15	25	8	4

Find the mean deviation about the median for the following data:

11.

x_i	15	21	27	30	35
f_i	3	5	6	7	8

12.

x_i	5	7	9	11	13	15	17
f_i	2	4	6	8	10	12	8

13.

x_i	10	15	20	25	30	35	40	45
f_i	7	3	8	5	6	8	4	9

Find the mean deviation about the mean for the following data:

14.

Mark	0–10	10–20	20–30	30–40	40–50	50–60
Number of students	6	8	14	16	4	2

15.

Height (in cm)	95–105	105–115	115–125	125–135	135–145	145–155
Number of boys	9	16	23	30	12	10

16.

Class	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Frequency	3	7	12	15	8	3	2

Find the mean deviation about the median for the following data:

17.

Class	0–10	10–20	20–30	30–40	40–50	50–60
Frequency	6	7	15	16	4	2

18.

Class	0–10	10–20	20–30	30–40	40–50	50–60
Frequency	6	8	11	18	5	2

ANSWERS

1. 4.25	2. 8.2	3. 2.5	4. 3
5. 5.36	6. 6.5	7. 10.5	8. 8
9. 2.3	10. 2.09	11. 5.1	12. 2.72
13. 10.1	14. 10.24	15. 11.6	16. 11.36
17. 10.16	18. 10.8		

1. Find the mean, variance and standard deviation for the numbers 4, 6, 10, 12, 7, 8, 13, 12.

2. Find the mean, variance and standard deviation for first six odd natural numbers.

Using short cut method, find the mean, variance and standard deviation for the data:

3.

x_i	4	8	11	17	20	24	32
f_i	3	5	9	5	4	3	1

4.

x_i	6	10	14	18	24	28	30
f_i	2	4	7	12	8	4	3

5.

x_i	10	15	18	20	25
f_i	3	2	5	8	2

6.

x_i	92	93	97	98	102	104	109
f_i	3	2	3	2	6	3	3

7.

Class	0–10	10–20	20–30	30–40	40–50
Frequency	5	8	15	16	6

8.

Class	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Frequency	3	7	12	15	8	3	2

9.

Class	25–35	35–45	45–55	55–65	65–75
Frequency	64	132	153	140	51

ANSWERS

1. Mean = 9, Variance = 9.25 and SD = 3.04
2. Mean = 6, Variance = 11.67 and SD 3.41
3. Mean = 14, Variance = 45.8 and SD = 6.77
4. Mean = 19, Variance = 43.4 and SD = 6.59
5. Mean = 18, Variance = 17 and SD = 4.12
6. Mean = 100, Variance = 29.09 and SD = 5.39
7. Mean = 27, Variance = 132 and SD = 11.49
8. Mean = 62, Variance = 201 and SD 14.17
9. Mean = 49.67, Variance = 135.44 and SD = 11.64

INTERDISCIPLINARY
FOR SCIENCE

Mathematics: Statistics in Work, Energy, and Power
Statistical Analysis Using Provided Data Table

Student	Physics Output (J)	Biology Energy Used (kJ)	Chemistry Energy Change (kJ)
A	150	120	-40
B	170	130	-38
C	190	140	-45
D	200	135	-42
E	210	150	-39

1. Compute the median for:
   o Physics Output
   o Biology Energy Used
   o Chemistry Energy Change
2. Calculate the mean deviation about the median for each subject.
3. Compute the variance of each dataset.
4. Identify the subject with the lowest variance and explain what it indicates about energy consistency.
5. Create a bar graph or pie chart comparing variance across Physics, Biology, and Chemistry.
Explain how statistical analysis supports understanding of energy transfer in science.

FOR COMMERCE

"Choco Delight" – A Local Bakery's Shift from Traditional to E-Marketing
Background:
Choco Delight, a local bakery in Delhi, initially relied on traditional marketing methods like flyers, newspaper ads, and word-of-mouth. In 2022, they decided to incorporate e-marketing strategies such as social media ads, influencer collaborations, and email campaigns.

Marketing Data Collected (Customer Orders Per Day Over 10 Days):
Traditional Marketing (before going digital):
Days 1–10:
12, 15, 14, 11, 13, 16, 10, 14, 13, 12
E-Marketing (after going digital):
Days 11–20:
18, 25, 22, 20, 19, 26, 21, 23, 24, 27

Mathematics: From the above data calculate
1. Mean Deviation from Mean for Days 1 -10
2. Mean Deviation from Median for Days 11-20
3. Variance for Days 1-10 and for Days 11-20 and compare the variation.
4. Standard Deviation for Days 1-20