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Kasus 1

Hari ke-1

60 60 60 60 65 65 65 65 65 65 65 65 65 69 69 70 70 70 70
70 70 70 70 70 75 77 77 77 80 80 85

Mean = $\frac{2079}{30}$ = 69,3

Value	f	x_i - mean	f x (x_i - mean)	(x_i - mean)^2	f x (x_i - mean)^2
60	4	-9,3	-37,2	86,49	345,96
65	8	-4,3	-34,4	18,49	147,92
69	2	-0,3	-0,6	0,09	0,18
70	9	0,7	6,3	0,49	4,41
75	1	5,7	5,7	32,49	32,49
77	3	7,7	7,7	59,29	177,87
80	2	10,7	10,7	114,49	228,98
85	1	15,7	15,7	246,49	246,49
Σ	30		144,400		1184,29999 7

Sample variance = $\frac{\sum (x_i - \text{mean})^2}{N-1}$

= $\frac{1184,299999 7}{29}$ = 40,837931034 48276

Sample Standard Deviation = $\sqrt{40,837931034 48276}$ = 6,390456246191093

Hari ke-2

77 78 78 78 78 80 80 80 80 80 80 80 80 80 80 80 80 80
80 83 83 85 85 85 85 85 87 88 88 88

$\text{mean} = \frac{2451}{30} = 81,7$

Value	F	$x_i - \text{mean}$	$F \times (x_i - \text{mean})$	$(X_i - \text{mean})^2$	$F \times (X_i - \text{mean})^2$
77	1	-4,7	-4,7	22,09	22,09
78	4	-3,7	-14,8	13,69	54,76
80	14	-1,7	-23,8	2,89	40,46
83	2	1,3	2,6	1,69	3,38
85	5	3,3	16,5	16,89	54,45
87	1	5,3	5,3	28,09	28,09
88	3	6,3	18,9	39,69	119,07
Σ	30		86,6		322,300

$$\text{Sample Variance} = \frac{\sum (x_i - \text{mean})^2}{N-1}$$

$$= \frac{322,300}{29} = 11,113793103448277$$

$$\text{Sample standard deviation} = \sqrt{11,113793103448277}$$

$$= 3,333735607910183$$

Hari ke-3

85 85 85 85 85 85 87 87 87 87 87 88 88 88 88 88 88 88 89 89
90 90 90 90 90 90 90 90 90 95

mean = $\frac{2644}{30}$ = 88,133333334

Value	F	X_i - mean	f x (X_i - mean)	$(X_i - mean)^2$	F x $(X_i - mean)^2$
85	6	-3,133	-18,798	9,816	58,896
87	5	-1,133	-5,665	1,284	6,42
88	7	-0,133	-0,931	0,018	0,126
89	2	0,867	1,734	0,752	1,504
90	9	1,867	16,803	3,486	31,374
95	1	6,867	6,867	47,156	47,156
Σ			50,798		145,476

Sample Variance = $\frac{\Sigma (X_i - mean)^2}{N-1}$

= $\frac{145,46666667}{29}$ = 5,016091554022989

Sample standard Deviation = $\sqrt{5,016091554022989}$

= 2,239633572979194

Kasus 2

75 78 80 80 80 80 80 80 80 80 85 85 85 85 85 85 85 87 87 88 90 90 90 90 90 90

Value	F	X_i - mean	F x (X_i - mean)	$(X_i - mean)^2$	F x $(X_i - mean)^2$
75	1	-9,2	-9,2	84,64	84,64
78	1	-6,2	-6,2	38,44	38,44
80	8	-4,2	-33,6	17,64	141,12
85	6	0,8	4,8	0,64	3,84
87	2	2,8	5,6	7,84	15,68
88	1	3,8	3,8	14,44	14,44
90	6	5,8	34,8	33,64	201,84
Σ			98,000		500,00

mean = 2105 / 25 = 84,2

Sample Variance = $\frac{\sum (X_i - mean)^2}{N-1}$

= $\frac{500,00}{24}$ = 20,83333332

Sample standard Deviation = $\sqrt{20,83333332}$

= 4,564354645876384

Kasus ke-3

16 18 19 20 21 22 23 23 24 25 25 25 26 27 28 29 29
30 30 30 30 30 31 32 33 33 33 34 35 35 35 35 36 37
38 56 59 63 69

$\text{mean} = \frac{1711}{50} = 34,22$

Value	F	Xi-mean	F x (Xi-mean)	$(Xi-mean)^2$	$F \times (Xi-mean)^2$
16	1	-18,22	-18,22	331,968	331,968
18	1	-16,22	-16,22	263,088	263,088
19	1	-15,22	-15,22	231,648	231,648
20	1	-14,22	-14,22	202,208	202,208
21	1	-13,22	-13,22	174,768	174,768
22	1	-12,22	-12,22	149,328	149,328
23	2	-11,22	-22,44	125,888	251,776
24	1	-10,22	-10,22	104,448	104,448
25	3	-9,22	-27,66	85,008	255,024
26	1	-8,22	-8,22	67,568	67,568
27	1	-7,22	-7,22	52,128	52,128
28	1	-6,22	-6,22	38,688	38,688
29	2	-5,22	-10,44	27,248	54,496
30	5	-4,22	-21,1	17,808	89,04
31	1	-3,22	-3,22	10,368	10,368
32	1	-2,22	-2,22	4,928	4,928
33	4	-1,22	-4,88	1,488	5,952
34	1	-0,22	-0,22	0,048	0,048
35	4	0,78	3,12	0,608	2,432
36	1	1,78	1,78	3,168	3,168
37	1	2,78	2,78	7,728	7,728
38	1	3,78	3,78	14,288	14,288
56	1	21,78	21,78	474,368	474,368
59	1	24,78	24,78	614,048	614,048
63	1	28,78	28,78	828,288	828,288
69	1	34,78	34,78	1209,648	1209,648
Σ			426,760		6380,980

$\text{Sample variance} = \frac{\sum (Xi-mean)^2}{N-1} = \frac{6380,98}{49} = 130,2199183673469$

$\text{Sample std. deviation} = \sqrt{\text{sample variance}} = 11,411218969389157$

Kasus ke-4

4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 6 6 6

$\text{mean} = \frac{\sum x_i}{N} = \frac{96}{20}$

value	F	x_i - mean	$F \times (x_i - \text{mean})$	$(x_i - \text{mean})^2$	$F \times (x_i - \text{mean})^2$
4	7	-0,8	-5,6	0,64	4,48
5	10	0,2	2,0	0,04	0,4
6	3	1,2	3,6	1,44	4,32
Σ	20		11,200		9,200

$\text{Sample variance} = \frac{\sum (x_i - \text{mean})}{N-1} = \frac{9,2}{19} = 0,484210526315789$

$\text{Std deviation} = \sqrt{0,484210526315789} = 0,695852373938493$