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TUGAS PROBSTAT

1 | 94 | 64 | 46 | 60 | 90 | 84 | 100 | 59 | 81 | 73 | 39
70 | 89 | 36 | 89 | 50 | 70 | 87 | 61 | 76 | 82 | 71
54 | 49 | 69 | 86 | 54 | 63 | 36 | 100 | 38 | 93 | 84

Tentukan nilai :

a. koefisien variasi
b. Median
c. Modus
d. Midrange
e. Midhinge
f. Desil 2 dan Desil 8
g. Persentil 21 dan persentil 67
h. Sajikan dalam Diagram Batang dan Daun

Jawab

⇒ 36, 36, 38, 39, 46, 49, 50, 54, 54, 59, 60, 61, 63, 64, 69, 70, 70, 71, 73, 76, 81, 82, 84, 84, 86, 87, 89, 89, 90, 93, 94, 100, 100

a. $KV = \frac{SD}{\bar{X}} \cdot 100\%$

$\bar{X} = \frac{36+36+38+39+46+49+50+54+54+59+60+61+63+64+69+70+70+71+73+76+81+82+84+84+86+87+89+89+90+93+94+100+100}{33}$

$= \frac{2,297}{33} = 69,6$

$SD = \sqrt{\frac{\Sigma(x_i-\bar{x})^2}{N}}^2 = \sqrt{\frac{11883,87}{33}} = \sqrt{360,12} = 18,98$

$KV = \frac{18,98}{69,6} \times 100\%$

$= 27,27\%$

b. Median $= \tilde{x}$ = data ke - $\frac{N+1}{2}$

= data ke - 17

= 70

c. Modus = 36, 89, 100, 54, 70, 89

d. Midrange = $\frac{X_{min} + X_{max}}{2}$

$= \frac{36+100}{2}$

$= 68$

e. Mid hinge

K_1 = data ke - $\frac{34}{4}$

= data ke - 8,5

= 54

K_3 = data ke - $\frac{3(34)}{4}$

= data ke - 25,5

= 86,5

Mid hinge = $\frac{K1+K3}{2}$

= $\frac{54+86,5}{2}$

= 70,25

f. D_2 = data ke - $\frac{2(34)}{10}$

= data ke - 6,8

= 49,8

D_8 = data ke - $\frac{8(34)}{10}$

= data ke - 27,2

= 89

g. P_{21} = data ke - $\frac{21(34)}{100}$

= data ke - 7,14

= 50,56

P_{67} = data ke - $\frac{67(34)}{100}$

= data ke - 22,78

= 83,56

h. diagram Batang dan Daun

Stem	Leaf
3	6689
4	69
5	0449
6	01349
7	00136
8	12446799
9	034
10	00

2. 302 468 840 850 407 613 898 388 277 742
392 654 304 789 236 490 797 545 569 685
818 338 582 717 659 733 714 306 533 797
811 757 862 213 320 180 426 281 183 453
799 312 301 560 762

a. Rata2
b. Simpangan baku
c. IQR
d. Range
e. Desil 4 dan Desil 9
f. Persentil 14 dan persentil 82
g. koefisien variasi
h. Sajikan data dalam diagram Batang dan Daun

Jawab

(180, 183, 213, 236, 277, 281, 301, 302, 304, 306, 312, 320, 338, 388, 392, 407, 426, 453, 468, 490, 533, 545, 560, 564, 582, 613, 654, 659, 685, 714, 717, 733, 792, 799, 757, 762, 789, 797, 797, 811, 818, 840, 850, 862, 898

a. Rata2

$$\bar{X} = \frac{\sum x}{n}$$

$$= \frac{24608}{45} = 546,84$$

b. Simpangan baku

$$S = \sqrt{\frac{\sum (x_i - \mu)^2}{N}}$$

$$S^2 = \frac{(45).(605,553,664).(762-546,844)}{(45).} = \sqrt{47682,131358025}$$

$$S = 218,36$$

c. IQR

$$= k_3 - k_1$$
$$= 753 - 316$$
$$= 437$$

d. Range
: Xmax - Xmin
: 898 - 180
R : 718

e. D_4 = data ke - $\frac{4(46)}{10}$
= data ke - 18,4
: 459

D_9 = data ke - $\frac{9(46)}{10}$
= data ke - 41,4
: 826,8

f. P_{19} = data ke - $\frac{19(46)}{100}$
= data ke - 19
= 289,8

P_{82} = data ke - $\frac{82(46)}{100}$
= data ke 37,72
= 794,76

g. $KV = \frac{SD}{\bar{x}} \times 100\%$

$SD = \sqrt{\frac{\sum(x_i - \bar{x})^2}{N}} = \frac{218,36}{546,84} \times 100\% = 39,93\%$

h. diagram batang daun

stem	leaf	stem	leaf
18	0 3	56	0
21	3	58	2
23	6	61	3
27	7	65	4
28	1	68	5
30	1 2 4 6	71	4 7
31	2	73	3
32	0	74	2
33	8	75	7
38	8	76	2
39	2	78	9
40	7	79	7 7
42	6	81	1
45	3	84	0
46	8	85	0
49	0	86	2
53	3	89	8
54	5		

3.

75	52	126	53	81	105	98	66	113	44
112	56	86	101	70	130	63	96	43	77
118	69	69	72	111	101	86	84	53	48
76	78	105	76	127	81	85	112	95	70

a. Koefisien Variasi
b. Median
c. Modus
d. Midrange
e. IQR
f. Modus
g. Desil 2 dan desil 8
h. Persentil 37 dan persentil 73
i. Sajikan data dalam bentuk diagram kotak

Jawab

43, 44, 48, 52, 53, 53, 56, 63, 66, 69, 69, 70, 70, 72, 75, 76, 77, 78, 81, 81, 84, 85, 86, 86, 95, 96, 98, 101, 105, 111, 112, 112, 113, 118, 126, 127, 130

a. $KV = \frac{SD}{\bar{x}} \times 100\%$

$= \frac{267,170}{89,075} \times 100$

$= 3,177$

$S^2 = \sqrt{\frac{\Sigma (x_i - M)^2}{N}}$

$S^2 = \sqrt{\frac{40\,(23.623.492) - 11.390.769}{40}}$

$=$

b. Median $= \tilde{X}$ = data ke $\frac{N+1}{2}$

$= 81$

c. Modus

= 69, 86, 53, 81, 105, 70, 76, 101, 112

d. Midrange $= \frac{X_{max} + X_{min}}{2}$

$= \frac{130+43}{2}$

$= 86,5$

e. IQR

$K_3 - K_1$

$= 109 - 69$

$= 35$

f. modus
= 69, 86, 53, 81, 105, 70, 76, 101, 112

g. Desil

D_2 = Data ke $\frac{2(n+1)}{10}$

= Data ke $\frac{2(41)}{10}$

= Data ke - 8,2

= 52,5

D_8 = Data ke - $\frac{8(41)}{10}$

= Data ke - 38,2

= Data k - 38,2

= 126,5

h. P_{37} = Data ke - $\frac{37(41)}{100}$

= Data ke 15,17

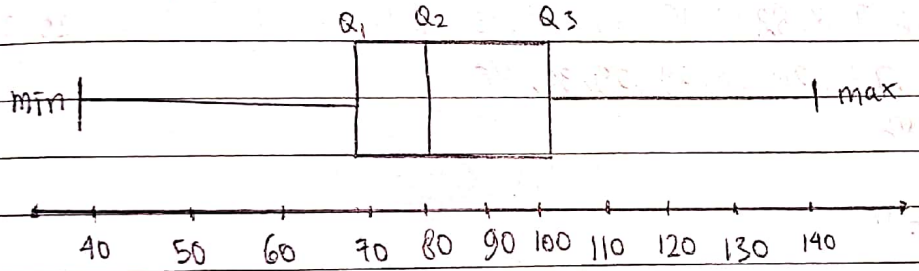
= 75,17

P_{73} = Data ke - $\frac{73(41)}{100}$

= Data ke 10

= 101

i. Box plot :



Outler = $[k_1 - 1,5\,IQR\ ,\ k3 + 1,5\,IQR]$

= [18, 154]

4. 16 6 3 20 11 22 7 6 18 1
30 2 16 20 4 11 5 23 8 27
30 29 18 26 20 4 28 1 11 16
18 1 3 21 10 23 25 10 29 27
8 25 15 22 5 5 28 22 29 28

a. Rata-Rata
b. Varians
c. Koefisien Variasi
d. Midhange
e. Median
f. Modus
g. D_9 dan D_6
h. P_{10} dan P_{91}
i. Range

1,1,1,2,2,3,3,4,4,5,5,5,6,6,7,8,8,8,10,10,11,11,11,15,16,16,16,18,18,18,20,20,20,2
22,22,22,23,23,25,25,26,27,27,28,28,29,29,30,30,

a. Mean $= \bar{X} = \frac{792}{n} = \frac{792}{50} = 15,86$

b. KV $= S^2 = \frac{\sum (x_i - \bar{x})^2}{n}$

$= \frac{\quad}{50}$

KV $= 90,8404$

c. Variasi $\frac{SD}{\bar{x}} \times 100\%$

$= \frac{90,8404}{15,86} \times 100$

$= 8,251,978$

d. Midhange : $k_1 = 6$

$k_3 = 25$

$= \frac{k_1 + k_3}{2} = \frac{25+6}{2} = \frac{31}{2}, 15,5$

e. Median = data-ke $\frac{N+1}{2}$

= data-ke $\frac{34}{2} = 17$

f. modus = 16, 20, 11, 22, 18, 1, 28, 29, 5

g. D_6 = Data ke - $\frac{6(51)}{10}$ = Data ke - 30,6 = 20

D_9 = Data ke - $\frac{9(51)}{10}$ = Data ke - 45,9 = 28,9

h. P_{19} = Data ke - $\frac{19(51)}{100}$ = Data ke - 9,69 = 5

P_{91} = Data ke - $\frac{91(51)}{100}$ = Data ke - 46,41 = 29

i. Range

$X_{max} - X_{min}$

= 30 - 1

= 29