

STA 203

CHUKWILI DANIEL NONSO

BHU/20104/05/0010

COMPUTER SCIENCE

ASSIGNMENT 3

Using the Table below. Find S.D

Class Method	f	xc	fx	$(x-\bar{x})$	$f(x-\bar{x})^2$	$(x-\bar{x})^2$	x^2	fx^2
19.0-19.7	4	19.35	77.40	-2.976	35.428	8.857	374.4	1497.6
19.8-20.5	4	20.15	80.60	-2.176	18.94	4.735	406.02	1624.08
20.6-21.3	10	20.95	209.50	-1.376	18.93	1.893	438.9	4389
21.4-22.1	5	21.75	108.75	-0.576	1.66	0.332	473.86	2365.8
22.2-22.9	7	22.55	157.85	0.224	0.350	0.050	508.5	3559.5
23.0-23.7	5	23.35	116.75	1.024	5.245	1.049	545.2	2726
23.8-24.5	11	24.15	265.65	1.824	36.597	3.327	583.2	6415.2
24.6-25.3	4	24.95	99.80	2.624	27.54	6.885	622.5	2490
	50		1116.3		144.69			25067.18

- Using Variance = $\frac{\sum f(x-\bar{x})^2}{\sum f}$ and S.D = $\sqrt{\text{Variance}}$
 solution

$$\text{Variance} = \frac{\sum f(x-\bar{x})^2}{\sum f} = \frac{144.69}{50} = 2.894 //$$

$$S.D = \sqrt{\text{Variance}} = \sqrt{2.894} = 1.701 //$$

- Using Exact Mean Method for Finding variance and S.D

$$S^2 = \frac{\sum f x^2}{\sum f} - \left(\frac{\sum f x}{\sum f} \right)^2 = \frac{25067.18}{50} - \left(\frac{1116.3}{50} \right)^2$$

$$= 501.344 - 498.45$$

$$= 2.894 //$$

$$S.D = \sqrt{\text{Variance}} = \sqrt{2.894}$$

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