Ques Q19

fresh veg mean: $\frac{264+259+266+37}{4} = 261.5$

fruit mean $= \frac{31+45+69+105}{4} = 62.5$

rice mean $= \frac{367+337+269+246}{4} = 304.75$

fish mean $= \frac{23+28+31+44}{4} = 31.5$

mean of meat $= \frac{70+61+69+77}{4} = 69.25$

729.5

women:

veg men: $\frac{178+235+266+304}{4} = 245.75$

fruit mean: $\frac{28+46+70+121}{4} = 66.25$

rice $= \frac{315+276+243+220}{4} = 889$

fish $= \frac{19+21+28+46}{4} = 79.5$

meat: $\frac{48+43+54+63}{4} = 52$

1332.5

overall mean: $\frac{\text{men} + \text{women}}{8} \Big/ \frac{\text{men} + \text{woman}}{8}$

$= \frac{729.5 + 1332.5}{8} = 896.0625$

Range, M.D., Q.D
Variance, Standard D.
Coefficient, Skewness

$$SD = \sqrt{\frac{f(31.5-62.5)^2 + (45-62.5)^2 + (69-62.5)^2 + (105-62.5)^2}{4}}$$

Q1a

$$SD = \sqrt{\frac{(-31.5)^2 + (17.5)^2 + (6.5)^2 + (42)^2}{4}}$$

$$SD = \sqrt{\frac{1764 + 306.25}{4}} \quad \frac{42.25 + 1764}{4} = \sqrt{2154.75}$$

$$SD = 46.419$$ Ans

$$SD = \sqrt{\frac{(23-31.5)^2 + (28-31.5)^2 + (31-31.5)^2 + (44-31.5)^2}{4}} \quad \frac{(-8.5)^2 + (3.5)^2 + (0.5)^2 + (12.5)^2}{4}$$

$$SD = \sqrt{\frac{72.25 + 12.25}{4}} \quad \frac{84 + 156.25}{4} = \sqrt{60.25} = 7.76$$

Q1 = 21 Q1 = 21

Q3 = 31 Q3 = 28

Q4 = 44 Q4 = 46

diagram for f & f

overall mean = $\frac{729.5 + 1332.5}{2}$ = 896.0625

SD = $\sqrt{\frac{(204-264.5)^2 + (266-261.5)^2 + (259-261.5)^2 + (317-264.5)^2}{4}}$

19

$\frac{(-57.5)^2 + (9.5)^2 + (-9.5)^2 + (55.5)^2}{4}$

$\sqrt{\frac{3,306.25 + 20.25 + 6.25 + 3080.5}{4}} = \sqrt{\frac{6413}{4}}$ = 1603.5

SD = $\sqrt{1603.5}$ = 40.043

Q (B) milk 3 5 23 39

(2) b rootveg 7 11 16 29

wheat/flour 74 114 197 233

whe milk root veg 3 wheat flour

have consumption are graduall decrease from

G — 84 in man i.e. w[illegible] maintain

food have somewhat same consumption

Q 1b

Scanned with CamScanner

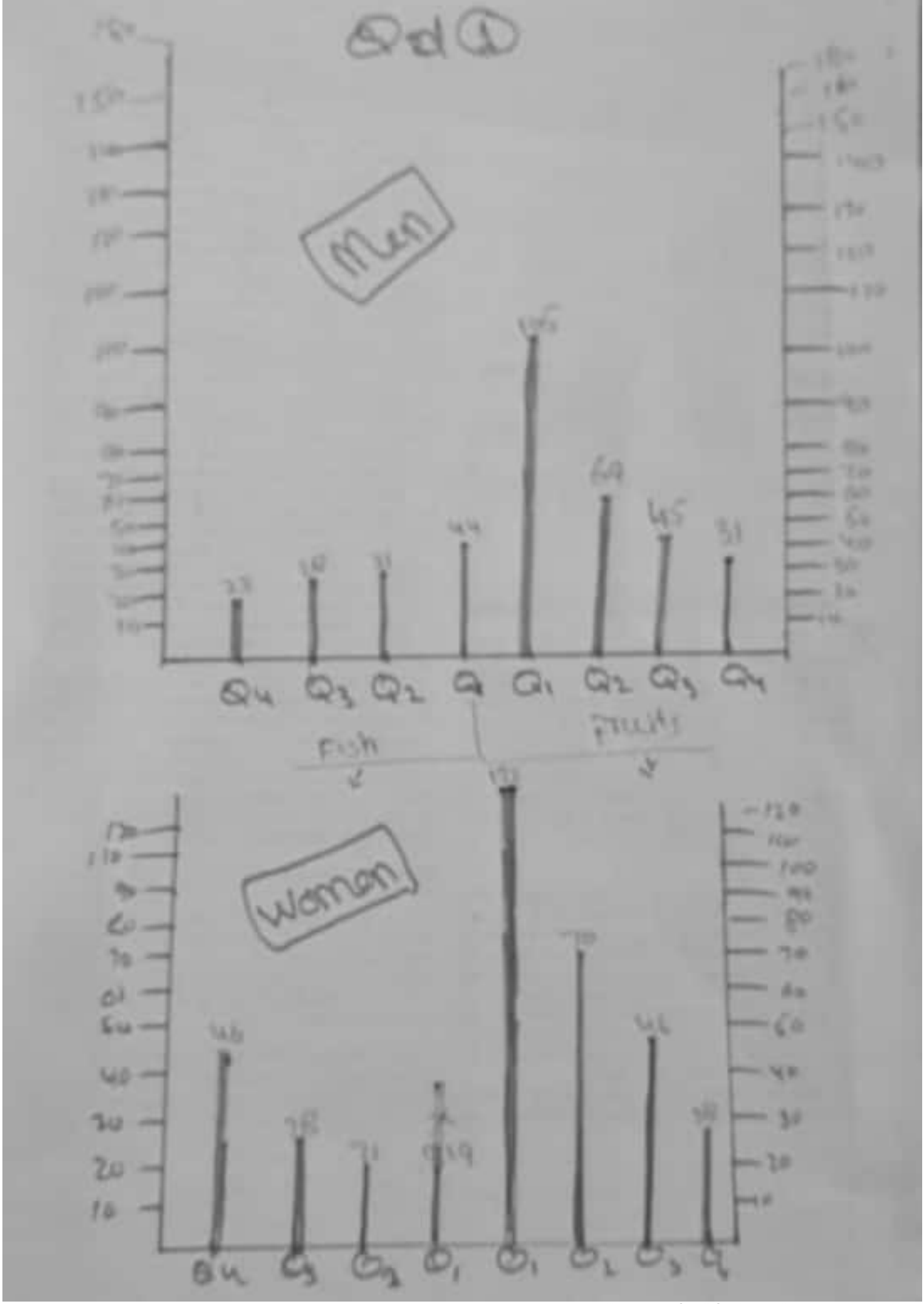
1 c)

=> The figures of milk in men the Q_4 & Q_4 are less than Q_2 & Q_1 i-e are gradually increas from Q_4 — Q_1

=> Root Veg:- The Q_1 & Q_2 in high than Q_4 & Q_3 in bothes ~~data~~ (from question)

wheat flour: The Q_1 is too high than gradually decrase toward Q_4 Q_3 & Q_2

Thus same situation occur in women.



(c) Men require on average about 20% more food per day than women to maintain energy levels. Use this information to compare the consumption of the main food group by men in Q4 & women in Q1. (you not require to consider whole grain, roots vegetable or milk

	Q4	Q1 women
ish veg	304	304
uit	31	121
ice	(367)	220
eat flour	79	180
ole grain	2	22
ot veg	7	28
eat	(70)	63
Fish	23	46
Milk	2	48

	Q4	Q1
Rice =	367	220
meat =	70	63

According to question in given table only the Rice & meat are 20% greater than women to maintain energy level.

Q 1 E

(f) Explain in your own words what the Standard deviation for the above commodities show for men & women and which one is better result.

Q1F

=> According to SD the Result of women is better than men in the sense that consumption pattern i.e. the men have high value because the consumption is more the women.

Q1F

(a) Purposes of Census:-

→ Collect the information about population.

→ to conclud the seats Number of Each state.

→ also collect the information of fund recivng & how much

(b) → All the data Number will be mention.

→ will systematic procedures to collec the data.

→ costly

→ give more accurate result.

→ Error chances is too less.

(c) → only 6% peoples are absent due to following reasons.

① high Criteria.

② Some people are not serious.

③ ~~own citizen~~ Citizenship

④ Age, Working.

jedi knight :-

⇒ 23yr old religion

⇒ officially declared in 2016 becaus a lot of people is converted into jedi knight it related to starwars..

→ Belive on peace

→ against Govt violation.

→ distrust of people on govt.

d

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(E) Discuss the potential problems in incorporating additional data told by Govt agencies

(E)

Answer:- problem facing in online 2021UK Census to people:-

=> Security risk
=> Some peoples are not serious
=> Not Interesting
=> Wifi Connection
=> Ethical issue.
=> privacy
=> Some people are fear

(F) problem faced to Govt:-

-> Hicking of the website
-> Curruption
-> Crimiles Control
-> due to High cost difficult to organize.
-> organization problem
-> How to inform the people who lived in rural areas
-> Motivation of the people

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Q2

Q3: AM:? Mode?
H.M:? Quartile:?
G.M:? Decile:?
Median:? percentile:?
M.D:? Range:?
Q.D:? Variance:?
Standard deviation:?
Coefficient of variation:? Skewness?

Rainfall (inch-)	No of yrs	mid point (x)	fx	
20-24	1	22	22	
25-29	3	27	81	
30-34	5	32	160	
35-39	8	37	296	
40-44	5	42	210	
45-49	2	47	94	
50-54	0	52	0	
55-59	1	57	57	
	Σ:25 ⟸		Σ:920	

$\Rightarrow A.M = \frac{\Sigma fx}{\Sigma f} = \frac{920}{25} = \boxed{36.8}$

$\Rightarrow H.M = \frac{1}{36.82} = 0.02708$

H.M is the Reciprocal of AM.

Classes	F	x	fx	f log x	F/x	C.F	
20-24	1	22	22	1.34	0.045	1	
25-29	3	27	81	4.29	0.11	4	
30-34	5	32	260	7.53	0.15	9	
35-39	(8)	37	296	12.54	0.21	17	
40-44	5	42	210	8.11	0.119	22	
45-49	2	45	94	3.34	0.042	24	
50-54	0	52	0	0	0	24	
55-59	1	57	57	1.75	0.017	25	(n)

$$\text{Median} = L + \frac{h}{F}\left(\frac{n}{2} - C\right)$$

$$\text{Median} = 54.5 + \frac{8}{5}\left(\frac{25}{2} - 24\right)$$

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$$\text{Decile} = \frac{n+1}{10} = \frac{25+1}{10} = 2.6$$

Range:- R. Max - Min

$R = 57 - 22 = 35$

Percentage: $\frac{920 \times 25}{100} = 230$

Quartile: $\frac{1}{4}(n+1) = \frac{1}{4}(25+1)$

$= \frac{26}{4} = 6.5$

$$\text{Median} = \frac{L + h}{f}\left(\frac{n}{2} - C.F\right) \text{ grouped data}$$

$$\text{med} = 54.5 + \frac{8}{5}\left(\frac{25}{2} - 24\right)$$

$$= 54.5 + \frac{8}{5}\left(\frac{25 - 48}{2}\right)$$

$$= (54.5 - 18 - 4)$$

$$\text{Med} = 36.50$$

(4)

$$\text{Mode} = L + \frac{f_m - f_0}{2f_m - f_0 - f_1} \times h$$

(or) $$L + \frac{f_m - f_1}{(f_m - f_1) + (f_m - f_2)} \times h$$

$$= 34.5 + \frac{8 - 5}{(8-5+8-5)} \times 8$$

$$= 34.5 + \frac{8-5}{(8.5)+(8-5)} \times 8$$

$$= 34.5 + \frac{3}{3+3} \times 8$$

$$= 34.5 + (0.5 \times 8)$$

$$\text{Mode} = \boxed{38.5}$$

G.M

log x	F	F log x
1.342	1	1.342
1.431	3	4.293
1.505	5	7.525
1.568	8	12.544
1.623	5	8.115
1.672	2	3.344
1.716	0	0
1.755	1	1.755
	$\Sigma = 25$	$\Sigma = 38.918$

$$G.M = \text{Antilog}\left(\frac{\Sigma F \log x}{\Sigma F}\right)$$

$$G.M = \text{Antilog}\left(\frac{38.918}{25}\right)$$

~~G.M = 36.03962~~

G.M = 1.55664

then Take Antilogge

G.M = 36.03962

Classes	x	f	x-x̄	f(x-x̄)
20-24	22	1	-14.8	-14.8 (5)
25-29	2.7	3	-9.8	-29.4
30-34	3.2	5	-4.8	
35-39	37	8	0.2	-24
40-44	42	5	5.2	-1.6
45-49	47	2	10.2	-26
50-54	52	0	15.2	-20.4
55-59	57	1	20.2	0
		Σ:25	Σf(x-x̄) =21.6	20.2 Σf(x-x̄) =0

$$M.D = \frac{\Sigma f(x-\bar{x})}{\Sigma f}$$

$$= \frac{0}{25} = 0$$

$$S^2 = \frac{\Sigma f x (x-\bar{x})^2}{\Sigma f}$$

$$S^2 =$$

$x - \bar{x}$	$(x-\bar{x})^2$	f	$f(x-\bar{x})^2$
14.92	222.60	1	222.606
9.92	98.406	3	295.218
4.92	24.206	5	121.03
0.08	0.0064	8	0.0512
5.08	25.806	5	129.03
10.08	101.606	2	203.212
15.08	227.406	0	0
20.08	403.206	1	403.206
		25	$\Sigma = 1171.1052$

$\bar{x} = 21.6$

Variance

$$S^2 = \frac{\Sigma f(x-\bar{x})^2}{\Sigma f}$$

$$S^2 = \frac{1171.1052}{25}$$

$$S^2 = 46.844$$

Standard deviation:

$$SD = \sqrt{\frac{\Sigma f(x-\bar{x})^2}{\Sigma f}}$$

$$SD = \sqrt{46.844}$$

$$SD = 6.844426$$

Skewness = Mod − Mod

$88.50 - 38.5$

$= 2.4$

Quartile: $\frac{n}{4}$

Q_1 Q_2 Q_3

Lower middle. Upper

$$Q_1 = \frac{n}{4} = \frac{25}{4} = 6.25$$

According to question. :- (24.5 - 34.5)

$$Q_1 = L + \frac{n}{F}\left(\frac{n}{4} - CF\right)$$

$$Q_1 = 24.5\,(6.25 - 4$$

$$= \boxed{31.75}$$

$$Q_3 = \frac{3n}{4} = \frac{3 \times 25}{4} = 18.75 \quad (10 - 25)$$

$$= L + h/F\left(\frac{3n}{4} - C.F\right)$$

$$= 39.5 + 1.75 = 41.25$$

Decile:

$D_1 \ldots\ldots D_9$ (7)

$D_1 = \frac{n}{10} = \frac{25}{10} =$

$D_2 = \frac{2n}{10} = \frac{50}{10} = 5$

$D_7 = \frac{7 \times 25}{10} =$

$D8 = L + \frac{h}{F}\left(\frac{8n}{10} - c\right)$ $\therefore 89.5$

$D8 = 89.5\left(\frac{8 \times 25}{10} - 24\right)$

$= 54.5\left(\frac{200}{10}^{20} - 24\right) = 872.$

(8)

Percentile = $n/100$

$= \frac{25}{100} = 0.25$

$P_{30} = \frac{30n}{100} = \frac{30 \times 25}{100} = 7.5$

$\therefore P_{30} = L + \frac{h}{f}\left(\frac{30}{100} - cf\right)$

$P_{30} = 24.5 + 3.50)$

$P_{30} = 33$

Q3 a

ungp data

Q3 (a) $AM = \frac{\Sigma x}{n} \quad \frac{929}{25} = 37.12$

$G.M = \text{Antilog}\left(\frac{\Sigma \log x}{n}\right) =$

$\frac{40.64}{25}$

$\text{Antilog}(1.6256) = 0.2110$

$H.M = \frac{n}{\Sigma\left(\frac{1}{x}\right)} = \frac{25}{1.6065} = 15.5566$

percentile: $\frac{(n+1)^{th}}{100} = \frac{25+1}{100} = 0.26$

$= \frac{3(n+1)}{100} = 0.78$

$Q_1 = \frac{i(n+1)^{th}}{4} = \frac{26}{4} = 6.5$

Decile: $\frac{i(n+1)}{10} = 2.6$

Q3 b

x	Log x	1/x	x − log x (40.64784)	x^2
22	1.342	0.04545	−18.647	484
27	1.4313	0.0370	−13.647	729
27	1.4313	0.0370	−13.647	729
27	1.4313	0.0370	−13.647	729
32	1.50514	0.03125	−17.647	1024
32	1.50514	0.03125	−8.647	1024
31	1.49136	0.03222	−9.64784	961
33	1.5185	0.0303	−7.647	1089
34	1.5314	0.0294	−6.647	1156
37	1.5682	0.0270	−3.64784	1369
37	1.5682	0.0270	−3.647	1369
37	1.5682	0.0270	−3.647	1369
37	1.5682	0.0270	−3.647	1369
38	1.5797	0.02631	−2.647	1444
38	1.5797	0.02631	−2.647	1444
38	1.5797	0.02631	−2.647	1444
38	1.5797	0.02631	−2.647	1444
43	1.6334	0.0232	−2.3521	1849
43	1.6334	0.0232	2.3521	1849
42	1.6232	0.02380	2.3521	1764
42	1.6232	0.02380	2.3521	1764
42	1.6232	0.02389	2.3521	1764
47	1.6720	0.0242	6.5216	2209
47	1.6720	0.0212	6.5216	2209
57	1.755	0.0175	16.35216	3249
Σ 928	Σ = 40.64784	Σ = 1.66405	Σ = 101.01911	Σ = 39042

10

Rang = 57 − 22 = 35

$$S.D = \sqrt{\frac{\Sigma (x - \bar{x})^2}{n-1}}$$

$$S.D = \sqrt{\frac{\Sigma (1020.4 - 8)^2}{25-1}} = 20.83$$

$$S^2 = \frac{\Sigma (x - \bar{x})^2}{24} =$$