



Scatter DIAGRAM

Regression equation

$$= \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2}$$

$$= \frac{12 \times 2278 - 102 \times 298}{12 \times 1134 - (102)^2}$$

$$\frac{27336 - 30396}{13608 - 10404} = \frac{-3060}{3204} = -0.9$$

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Sciences / geology

Sta 104

Class Interval	$x$	class boundary	F	$fx$	$f^2$
10.1-19.0	14.55	9.6-19.5	4	58.20	4
19.1-29.0	24.05	18.6-29.5	9	216.45	13
29.1-39.0	34.05	28.6-39.5	7	238.35	20
39.1-49.0	44.05	38.6-49.5	9	396.45	29
49.1-59.0	54.05	48.6-59.5	8	432.40	37
59.1-69.0	64.05	58.6-69.5	6	384.30	43
69.1-79.0	74.05	68.6-79.5	3	222.15	46
79.1-89.0	84.05	78.6-89.5	1	84.05	47
89.1-99.0	94.05	88.6-99.5	2	188.1	49
99.1-109.0	104.05	98.6-109.5	1	104.05	50
			50	2324.5	

$$\text{Mean} = \frac{\sum fx}{\sum f}$$

$$= \frac{2324.5}{50} = 46.49$$

$$39.1 + \left[ \frac{25-29}{9} \right] 9.9$$

$$= 39.1 + [-1.4]$$

$$= 37.4$$

$$\text{Median} = L_1 + \left[ \frac{n/2 - f}{f_{med}} \right] c$$

$$= 39.1 + \left[ \frac{25-29}{9} \right] 9.9$$



$$\text{mode} = L_1 + \left[ \frac{\Delta_1}{\Delta_1 + \Delta_2} \right] C$$

$$\text{mode} = 19.1 + \left[ \frac{6}{6+1} \right] 9.9$$

$$= 19.1 + 8.486$$

$$= 27.586$$

$$\text{second mode} = 39.1 + \left[ \frac{1}{1+1} \right] 9.9$$

$$= 39.1 + 4.95$$

$$= 44.05$$

$$\text{multiple mode} = 27.586 + 44.05$$

$$= \frac{71.636}{2} = 35.818$$

$$11 \quad Q_3 = \frac{3N}{4} = \frac{3 \times 50}{4} = \frac{150}{4} \approx 37.5$$

$$D_2 = \frac{2 \times N}{10} = \frac{2 \times 50}{10} = \frac{100}{10} = 10$$



$$P_{25} = \frac{3.5N}{100} = \frac{25 \times 50}{100} = 12.5$$

no. of exp x	no. of rejects y	xy	x <sup>2</sup>
7	27	189	49
9	20	180	81
6	28	168	86
14	16	224	196
18	23	414	324
12	18	216	144
10	24	240	100
4	26	104	16
2	33	66	2
11	22	242	121
1	32	32	1
8	25	200	64
102	298	2278	104