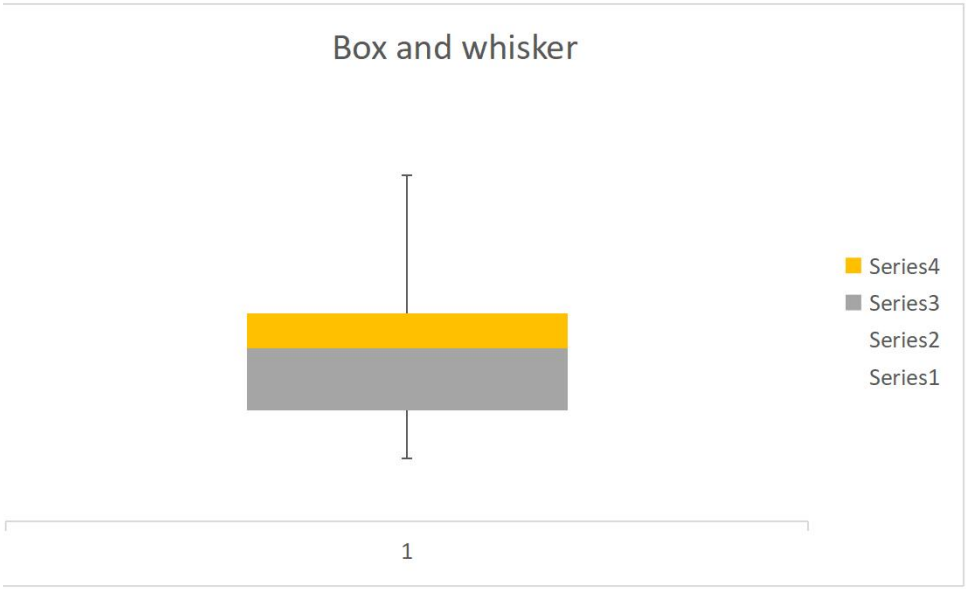
Following are the marks obtained by 13 students in business statistics.

Marks	formula				
24	n	13	standard deviation	22.16835	
27	Σx	734			
36	mean	56.46154	cv	39.26275	
48	median	54			
52	mode	52	karls pearson skewness		
52	25th per	48	sk(p)	0.201257	
54	Q1	48	s(b)	0	
55	Q3	60			
56					
60			p90	89	12
85			p10	28.8	120.4
90			kurtosis	0.099668	
95					

box and whishker plot

x	formula					difference
9	xmin	9	0	xmin	9	9
33	xmax	50	1	Q1	16	7
47	Q1	16	2	md	25	9
15	Q3	30	3	Q2	30	5
22	md	25	4	xmax	50	20
17						
18						
45						
50						
26						
25						
27						
9						
27						
10						


Box and whisker
Series4
Series3
Series2
Series1
1

compute mean ,median and modde using the following data

milage	400-419	420-439	440-459	460-479	480-499	500-519
frequency	12	27	34	24	15	8

the given class interval is inclusive and we have to change to exclusive and also calculate mid values

LCB	UCB	mid(x)	frequency	fx	CF	X^2	FX^2
399.5	419.5	409.5	12	4914	12	167690.3	2012283
419.5	439.5	429.5	27	11596.5	39	184470.3	4980697
439.5	459.5	449.5	34	15283	73	202050.3	6869709
459.5	479.5	469.5	24	11268	97	220430.3	5290326
479.5	499.5	489.5	15	7342.5	112	239610.3	3594154
499.5	519.5	509.5	8	4076	120	259590.3	2076722
			120	54480	120	1273842	24823890

mean	454			fm-f1	7
median	60	0.617647	451.8529	fn-f2	10
mode	447.7353			Q1	30
sd				Q3	90
				90th posit	108
				10th	12
p25	30				
	432.8333				
Q1	432.8333				
Q3					

Draw a scatter diagram of daily rainfall and particular level in kathmandu valley using excel

Daily rainfall(x)	particularlevel(y)	XY	X^2	Y^2	
4.1	122	500.2	16.81	14884	
4.3	117	503.1	18.49	13689	n
5.7	112	638.4	32.49	12544	NXY
5.4	114	615.6	29.16	12996	sumX*sum
5.9	110	649	34.81	12100	$n*sumX^2$
5	114	570	25	12996	$(sumX)^2$
3.6	128	460.8	12.96	16384	n*sumy2
1.9	137	260.3	3.61	18769	(sumy)
7.3	104	759.2	53.29	10816	
43.2	1058	4956.6	226.62	125178	

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.978658
R Square	0.957772
Adjusted R Square	0.95174
Standard Error	2.202613
Observations	9

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	770.2617	770.2617	158.7676	4.58E-06
Residual	7	33.96054	4.851506		
Total	8	804.2222			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	147.9107	2.518477	58.73021	1.09E-10	141.9554	153.8659
X Variable 1	-6.32399	0.501892	-12.6003	4.58E-06	-7.51077	-5.1372

RESIDUAL OUTPUT

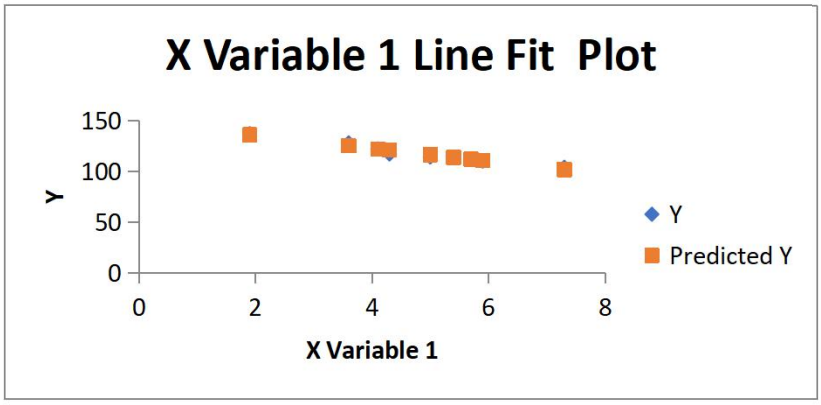
Observation	*Predicted Y*	*Residuals*
1	121.9823	0.017653
2	120.7175	-3.71755
3	111.864	0.136033
4	113.7612	0.238837
5	110.5992	-0.59917
6	116.2908	-2.29076

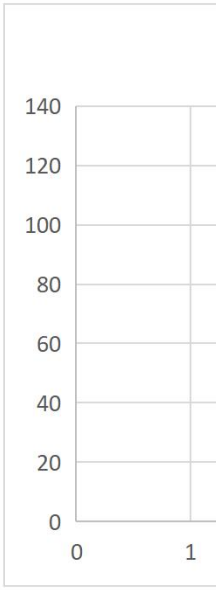
PROBABILITY OUTPUT

Percentile	*Y*
5.555556	104
16.66667	110
27.77778	112
38.88889	114
50	114
61.11111	117

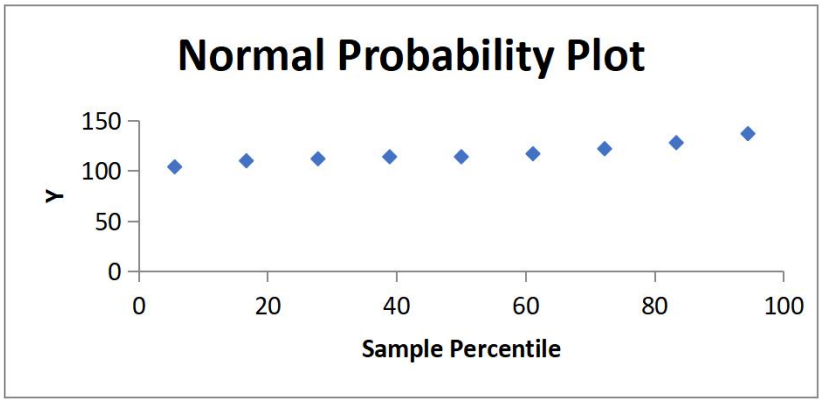
7	125.1443	2.855659	72.22222	122
8	135.8951	1.104881	83.33333	128
9	101.7456	2.254413	94.44444	137

9	y	85.07644
44609.4	∑x2.n-∑x2	13.16586
45705.6	r	-0.97866
2039.58	se	0.014076
1866.24	b	-6.32399
1126602	a	147.9107
1119364	y=147.91-6.32X	

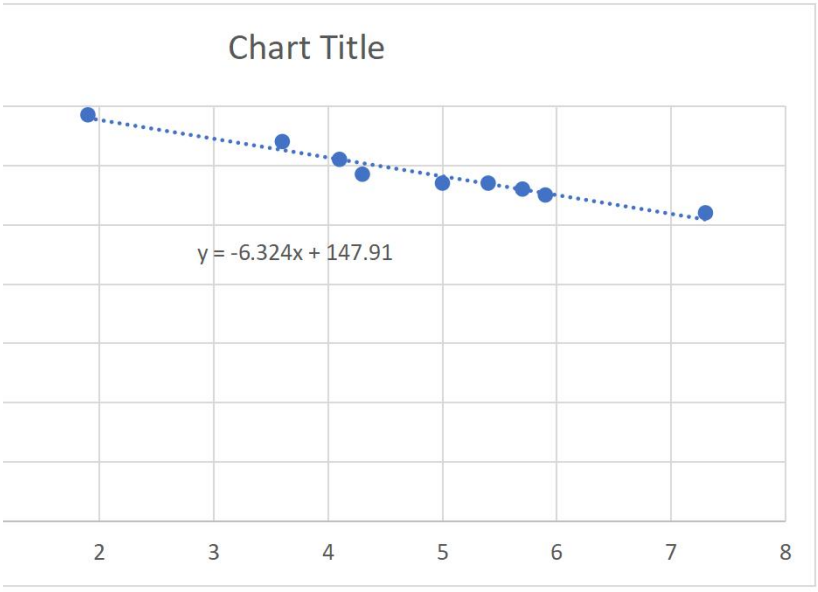




ower 95.0%	*pper 95.0%*
141.9554	153.8659
-7.51077	-5.1372



	Column 1	Column 2
Column 1	1	
Column 2	0.988602	1



A random varaible follows normal distribution with parameter μ=2.5 and σ =1.5
Find the probability of 1<X<2, x<5 and x>3

cases	symbol	value
mean	μ	2.5
S.D	σ	1.5

cases	lower limit	upp limite	prob
1<x<2	1	2	0.210786086
x<5		4	0.841344746
x>3	3		0.36944134

Panchakanya group of industries produces tube.The length of a tube of found to be normal distribution w
(a) Caculate prob that a random sample of one tube will have a length at least 110
(b)p(85<=x<=105)

p(x<=110)	0.97725
p(x=>110)	0.02275

(b)	p(85<=x<=105)	0.839994848
x1	85	0.001349898
x2	105	0.841344746

ith a population mean 100 and standard deviation 5

Find the expected mean

x	p(X=x)	x.p(X=x)	x^2*p(X=x)
0	0.1	0	0
1	0.2	0.2	0.2
2	0.45	0.9	1.8
3	0.15	0.45	1.35
4	0.05	0.2	0.8
5	0.05	0.25	1.25
15	1	2	5.4

x	p(X=x)
0	0.1
1	0.2
2	0.45
3	0.15
4	0.05
5	0.05
15	1

(A) mean	Ex	15
(b)E(x)^2		5.4
© var		1.4
E(4x+7)		15
v(4x+7)		22.4

calculate Spearman's rank correlation coefficient

A	B	rankA	rankB	d	d^2	
67	31	9	5	4	16	
41	29	2	4	-2	4	$r(s)=1-6\sum d^2/n(n^2-1)$
52	70	4	9	-5	25	
60	79	7	10	-3	9	0.369697
42	21	3	2	1	1	
39	19	1	1	0	0	
56	68	6	8	-2	4	
61	25	8	3	5	25	
53	40	5	7	-2	4	
69	37	10	6	4	16	
n=10					104	

Anger	6	7	5	21	13	5	13	14
Vigor	30	23	29	22	19	19	28	19

Anger	Vigor	r1	r2	d	d^2	
6	30	6	1	5	25	
7	23	5	4	1	1	
5	29	7.5	2	5.5	30.25	
21	22	1	5	-4	16	
13	19	3.5	7	-3.5	12.25	
5	19	7.5	7	0.5	0.25	
13	28	3.5	3	0.5	0.25	
14	19	2	7	-5	25	
					110	

13 repeated 2 times	m1	2	0.5	n(n^2 -1)	504
5 repeated 2 times	m2	2	0.5		
19 repeated 3 times	m3	3	2		

r(s) -0.34524

hence rank correlation is negative so it is low degree corelation betwwen angor and vigor

n(n^2-) 990

A card is drawn at random fgetting rom a well shuffled pack cards .what is the probability of (a) red card (b) black

cases	no of case	probability
red card	26	0.5
black carrd	26	0.5
total	52	1

you are hgiven below the income distribution of 1000 person, find the probability that a person selected has (a) i

income	0-500	500-1000	1000-1500	1500-2000	2000-2500	2500-3000	3000-3500	N
no.person	150	250	300	100	80	70	50	1000

income	no.person	probability
0-500	150	0.15
500-1000	250	0.25
1000-1500	300	0.3
1500-2000	100	0.1
2000-2500	80	0.08
2500-3000	70	0.07
3000-3500	50	0.05

prob income below 2000
0.8
prob income 2500 or more
0.2

the following table shows the suvery regarding the empoyment status and gender in a sample of 209 manageme

	employed status		
gender	employed	not	total
male	83	28	111
female	64	34	98
	147	62	209

what is the prob that a graduate chosen at random
a.is current employed
b.is a female and currently employed
c.is female or currently employed
d.suppose the garduate chosen is a female , what is the prob that she is currently employed ?

employed status

a	0.703349
b	2/7
c	0.346939
d	0.435374

‹ card

ncome below 2000 (b) income 2500 or more.

ɛnt graduate

A random varaible follows binomial distribution with parameter n=6 and p=0.4, find the probability of x=2, x<5 ar

n		6
p		0.4
q		0.6
cases	X=x	probability
x=2	2	0.31104
x<5	4	0.95904
x>3	3	0.1792

A person shoots three round at target .The probability of hitting a target successfully is 0.3.Compute the probabil

n	3
p	0.3
q	0.7

]

probability p(x)	
0	0.343
1	0.441
2	0.189
3	0.027

1

ıd x>3.

ity of hitting targets where x=0,1,2,3

calculate spearman's correlation coefficent between statistics and mathematics

X1	X2	d=X1-X2	d^2
2	1	1	1
1	3	-2	4
4	7	-3	9
6	5	1	1
5	6	-1	1
3	2	1	1
7	4	3	9

n	7	n(n2-1)
d^2	26	156
r(s)	0.535714	

In a chips factory machine A,B and C manufactured respectively 25%,35% and 40% of the total of their output 5,4 bolts.A chips is drawn at random from the product and is found to be defective .What is the probability that it wa

P(A)	0.25
p(B)	0.35
P©	0.4
p(D/A)	0.05
P(D?B)	0.04
P(D/C)	0.02

P(A/D)	0.362319
P(B/D)	0.405797
P(C/D)	0.231884

and 2 percent defective
s manufactured by machine A,B and C?

Fit binomial distribution and find the probability of less than 3 , less than equal to 3, exactly 3,not equal to

X	f	p(x)	expected	rounded		fx
0	20	0.003565	5.642978	6		0
1	100	0.029174	46.18228	46		100
2	190	0.104457	165.3562	165		380
3	280	0.213721	338.3198	338		840
4	350	0.273296	432.6277	433		1400
5	300	0.223666	354.0637	354		1500
6	220	0.114406	181.1041	181		1320
7	120	0.033439	52.93431	53		840
8	3	0.004276	6.768996	7		24
total	1583			1583		6404
n	8				mean	4.045483
mean	4.045483					
p	0.505685					
q	0.494315					

X	f	expected	rounded
0	20	5.6429	6
1	100	46.1822	46
2	190	165.3562	165
3	280	338.3198	338
4	350	432.6277	433
5	300	5.642978	6
6	220	181.1041	181
7	120	52.93431	53
8	3	6.768996	7

for finding poision distribution

X	f	p(x)	expected	rounded
0	20	0.017501	27.70448	28
1	100	0.070801	112.078	112
2	190	0.143212	226.7048	227
3	280	0.193121	305.7102	306
4	350	0.195317	309.1863	309
5	300	0.15803	250.1616	250
6	220	0.106551	168.6707	169
7	120	0.061579	97.47923	97
8	3	0.031139	49.29382	49

X	f	expected
0	20	28
1	100	112
2	190	227
3	280	306
4	350	309
5	300	250
6	220	169
7	120	97
8	3	49