PRATICAL WORK

FIT POISSOON DISTRIBUTION AND FIND THE PROBABILITIES OF LESS THAN 2, LESS THAN EQUAL TO 3,5, NOT EQAUL TO 3 AND GREATER THAN 1 USING DATA X AND F AS SHOWN BELOW:

X	F
0	211
1	250
2	154
3	68
4	20
5	12
6	7
7	3
8	1

Solution:

```
COMPUTE px=PDF.POISSON(x,1.34).
EXECUTE.
COMPUTE expfx=726 * px.
EXECUTE.
COMPUTE rndexpfx=RND(expfx).
EXECUTE.
```

X	F	PX	EPXFX	RNDEXPFX
0	211	.26	190.10	190.00
1	250	.35	254.73	255.00
2	154	.24	170.67	170.00
3	68	.11	76.23	76.00
4	20	.04	25.54	26.00
5	12	.01	6.84	7.00
6	7	.00	1.53	2.00
7	3	.00	.29	.00
8	1	.00	.05	.00
	726			**726**

The given distribution has been fitted.

PRACTICAL WORK

FIT BINOMIAL DISTRUBUTION AND FIND THE PROBABLITIES OF LESS THAN 4, LESS THAN EQUAL TO 4, 4 NOT EQUALS TO 4 AND GREATER THAN 4 USING DATA X AND F AS SHOWN BELOW:

X	Y
0	5
1	25
2	35
3	48
4	65
5	41
6	28
7	9
8	4

Solution:

```
COMPUTE ex=PDF.BINOM(x,8,3.72/8).
EXECUTE.
COMPUTE ef=260*ex.
EXECUTE.
COMPUTE rndef=rnd(ef).
EXECUTE.
```

X	F	EX	EF	RNDEF
0	5	.01	1.75	2.00
1	25	.05	12.13	12.00
2	35	.14	36.91	37.00
3	48	.25	64.16	64.00
4	65	.27	69.71	70.00
5	41	.19	48.47	48.00

6	28	.08	21.06	21.00
7	9	.02	5.23	5.00
8	4	.00	.57	1.00
	260			**260**

The given binomial distribution has been fitted.

PRACTICAL WORK

FIT THE POISSON DISTRIBUTION AND FIND THE MEAN AND VARIANCE FOR THE FOLLOWING DATA.

X	F
0	142
1	156
2	69
3	27
4	5
5	1

Solution:

X	Y	FX	PF	NPF	EXPF
0	142	0	.36	145.32	145
1	156	156	.37	147.14	148
2	69	138	.19	74.49	75
3	27	81	.06	25.14	25
4	5	20	.02	6.36	6
5	1	35	.00	1.29	1
	400	405	1.00		400

HERE

N = 400, $\sum$FX = 405 , Mean = $\frac{405}{400}$ = 1.0125

We know Poisson distribution is given by: $e^{-\mu} * \frac{\mu^x}{x!}$

SYNTAX :

```
COMPUTE PX=PDF.POISSON(X,1.0125).
EXECUTE.
```

```
COMPUTE NPX=400 * PX.
EXECUTE.
```

Therefore, the given distribution has been fitted.

PRACTICAL WORK

FIT THE BINOMIAL DISTRIBUTION AND FIND THE EXPETED FREQUENCIES FOR THE FOLLOWING DATA.

X	F
0	7
1	6
2	19
3	35
4	23
5	7
6	1

Solution:

X	Y	FX	PF	NPF	EXPF
0	7	7	.02	2.17	2.00
1	6	6	.12	11.56	12.00
2	19	38	.25	25.62	26.00
3	35	105	.29	30.30	30.00
4	23	92	.20	20.15	20.00
5	7	35	.09	7.15	7.00
6	1	6	.02	1.06	1.00
	98	282	1.00		98

HERE

N = 6 , $\sum$FX = 282 , Mean = $\frac{282}{6}$ = 2.877 , n = 6, p = 0.47

We know binomial distribution is given by : nCr *p ^ n-r *q ^ r

SYNTAX :

```
COMPUTE PF=PDF.BINOM(X,6,0.47).
```

```
EXECUTE.

COMPUTE NPF=98 * PF.
EXECUTE.

COMPUTE EXPF=RND(NPF).
EXECUTE.
```

Therefore, the given distribution has been fitted.