

2)The sample skewed coefficient.

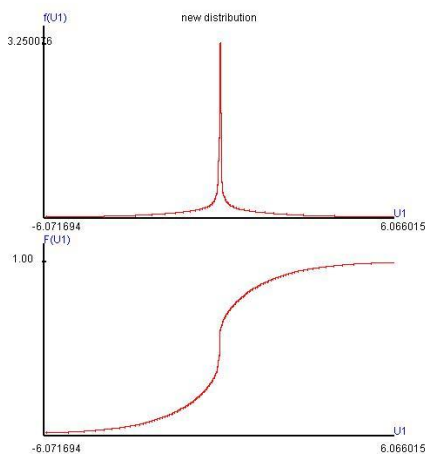
2.1)  $X_1, \dots, X_n \stackrel{iid}{\sim} \text{Uniform}(\alpha, \beta)$ ,

2.1.1)  $X_1, \dots, X_n \stackrel{iid}{\sim} \text{Uniform}(\alpha = -1, \beta = 1)$ ,  $U_1 = \left( \frac{X_1 - \bar{X}}{S} \right)^3$ ,

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n}, S = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}}$$

2.1.1.1)n=10

$f_{U_1}(u_1), F_{U_1}(u_1)$

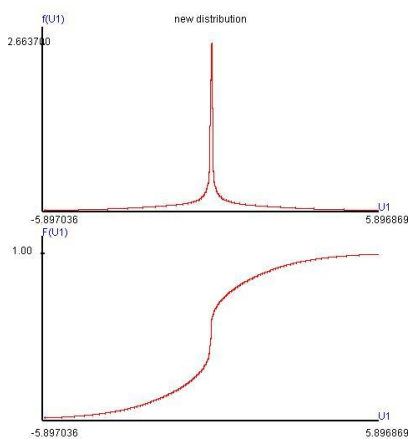


Coefficient

Mathematical Mean:	0.00014
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	3.94428
S.D. :	1.98602
Skewed Coef. :	0.00224
Kurtosis Coef. :	11.34822
MAD :	1.14815
Range :	44.84635
Mid_range :	-0.20844
Median :	-0.00000
Q1 :	-0.52297
Q2 :	-0.00000
Q3 :	0.52292
IQR :	1.04589
C.V. :	none

2.1.1.2)n=20

$f_{U_1}(u_1), F_{U_1}(u_1)$

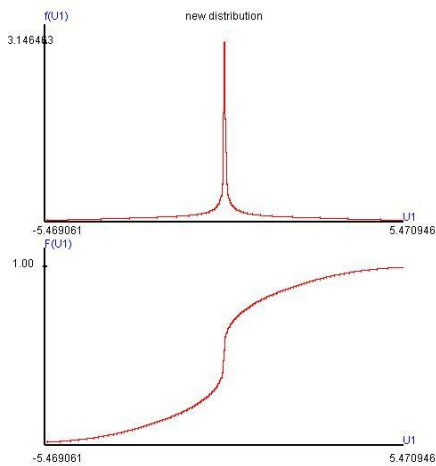


Coefficient

Mathematical Mean:	-0.00029
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	4.12864
S.D. :	2.03191
Skewed Coef. :	0.00056
Kurtosis Coef. :	9.21416
MAD :	1.22967
Range :	78.80614
Mid_range :	0.86433
Median :	-0.00000
Q1 :	-0.58045
Q2 :	-0.00000
Q3 :	0.57931
IQR :	1.15975
C.V. :	none

2.1.1.3)n=50

$$f_{U_1}(u_1), F_{U_1}(u_1)$$

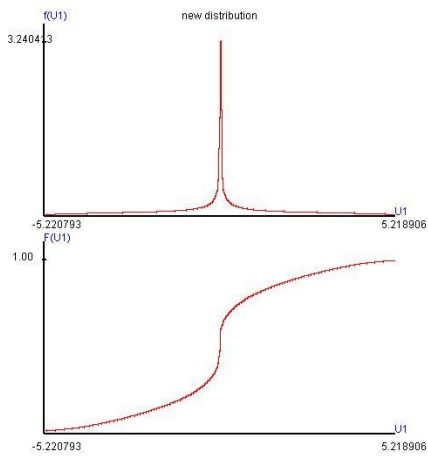


### Coefficient

Mathematical Mean:	0.00033
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	3.98839
S.D. :	1.99710
Skewed Coef. :	-0.00009
Kurtosis Coef. :	5.44079
MAD :	1.27215
Range :	48.59266
Mid_range :	-0.07197
Median :	0.00000
Q1 :	-0.61981
Q2 :	0.00000
Q3 :	0.62038
IQR :	1.24019
C.V. :	none

### 2.1.1.4)n=100

$$f_{U_1}(u_1), F_{U_1}(u_1)$$

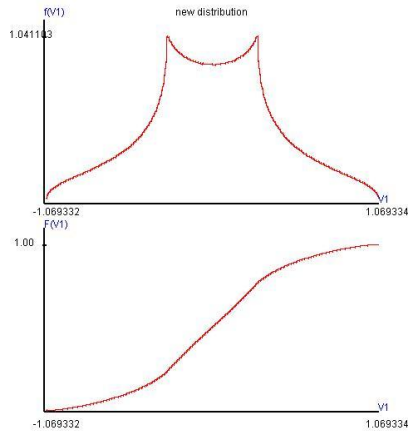


### Coefficient

Mathematical Mean:	-0.00005
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	3.92565
S.D. :	1.98132
Skewed Coef. :	-0.00021
Kurtosis Coef. :	4.51157
MAD :	1.28603
Range :	31.17348
Mid_range :	-0.21735
Median :	-0.00000
Q1 :	-0.63495
Q2 :	-0.00000
Q3 :	0.63475
IQR :	1.26970
C.V. :	none

$$2.1.2) X_1, \dots, X_n \stackrel{iid}{\sim} \text{Uniform}(\alpha = -1, \beta = 1), \hat{\gamma}_1 = \frac{\sum_{i=1}^n \left( \frac{X_i - \bar{X}}{S} \right)^3}{n},$$

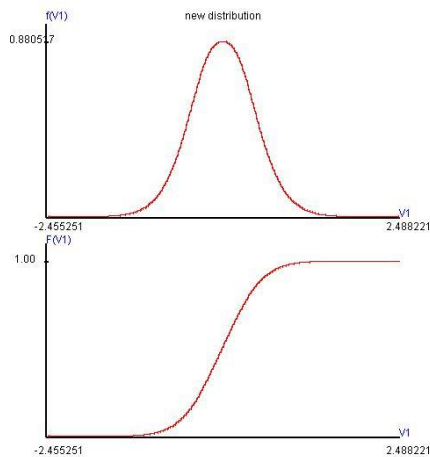
2.1.2.1) n=5  
 $f_{T_1}(t_1), F_{T_1}(t_1)$



#### Coefficient

Mathematical Mean:	-0.00002
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.17907
S.D. :	0.42317
Skewed Coef. :	-0.00002
Kurtosis Coef. :	2.76559
MAD :	0.33907
Range :	2.14662
Mid_range :	0.00000
Median :	-0.00006
Q1 :	-0.27616
Q2 :	-0.00006
Q3 :	0.27616
IQR :	0.55232
C.V. :	none

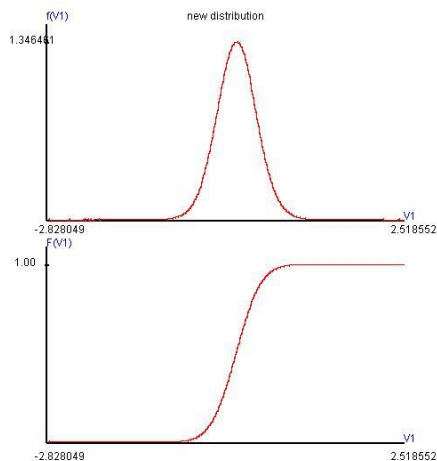
2.1.2.2) n=10  
 $f_{T_1}(t_1), F_{T_1}(t_1)$



#### Coefficient

Mathematical Mean:	0.00003
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.20882
S.D. :	0.45697
Skewed Coef. :	-0.00031
Kurtosis Coef. :	3.37646
MAD :	0.36081
Range :	4.96185
Mid_range :	0.01648
Median :	0.00004
Q1 :	-0.30138
Q2 :	0.00004
Q3 :	0.30151
IQR :	0.60289
C.V. :	none

2.1.2.3) n=20  
 $f_{T_1}(t_1), F_{T_1}(t_1)$



#### Coefficient

Mathematical Mean:	0.00002
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.09315
S.D. :	0.30520
Skewed Coef. :	0.00006
Kurtosis Coef. :	3.28652
MAD :	0.24094
Range :	5.36648
Mid_range :	-0.15475
Median :	-0.00001
Q1 :	-0.20049
Q2 :	-0.00001
Q3 :	0.20052
IQR :	0.40101
C.V. :	none

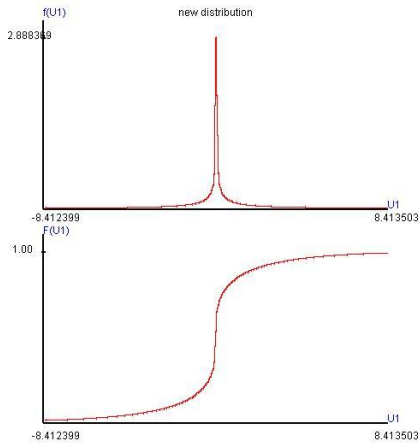
2.2)  $X_1, \dots, X_n \sim \text{Noraml}(\mu, \sigma^2)$ , <sup>iid</sup>

2.2.1)  $X_1, \dots, X_n \sim \text{Noraml}(\mu = 5, \sigma^2 = 2^2)$ ,  $U_1 = \left( \frac{X_1 - \bar{X}}{S} \right)^3$ ,

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n}, S = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}}$$

2.2.1.1) n=10

$f_{U_1}(u_1), F_{U_1}(u_1)$

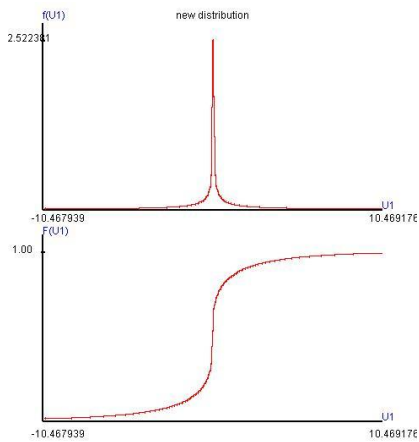


Coefficient

Mathematical Mean:	0.00021
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	6.19534
S.D. :	2.48904
Skewed Coef. :	-0.00260
Kurtosis Coef. :	12.27125
MAD :	1.26090
Range :	44.85017
Mid_range :	0.11082
Median :	0.00000
Q1 :	-0.32778
Q2 :	0.00000
Q3 :	0.32831
IQR :	0.65609
C.V. :	none

2.2.1.2) n=20

$f_{U_1}(u_1), F_{U_1}(u_1)$

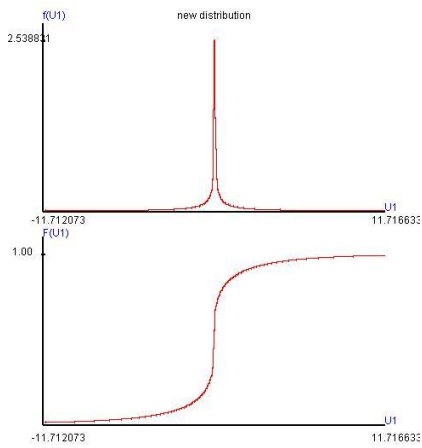


Coefficient

Mathematical Mean:	-0.00001
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	9.61350
S.D. :	3.10056
Skewed Coef. :	0.00037
Kurtosis Coef. :	21.66447
MAD :	1.42218
Range :	117.90486
Mid_range :	-0.56066
Median :	0.00000
Q1 :	-0.31479
Q2 :	0.00000
Q3 :	0.31486
IQR :	0.62965
C.V. :	none

2.2.1.3) n=50

$$f_{U_1}(u_1), F_{U_1}(u_1)$$

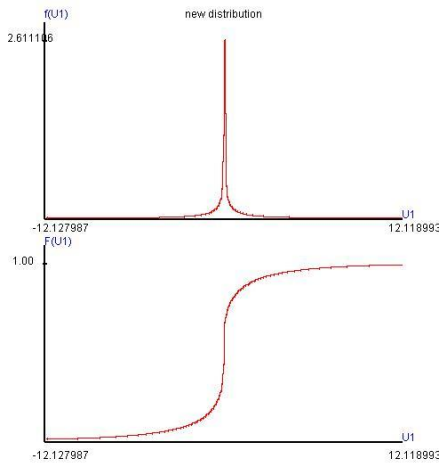


### Coefficient

Mathematical Mean:	0.00018
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	12.54415
S.D. :	3.54177
Skewed Coef. :	-0.00457
Kurtosis Coef. :	33.09198
MAD :	1.52530
Range :	228.71443
Mid_range :	-8.74590
Median :	0.00000
Q1 :	-0.30952
Q2 :	0.00000
Q3 :	0.30982
IQR :	0.61935
C.V. :	none

### 2.2.1.4)n=100

$$f_{U_1}(u_1), F_{U_1}(u_1)$$

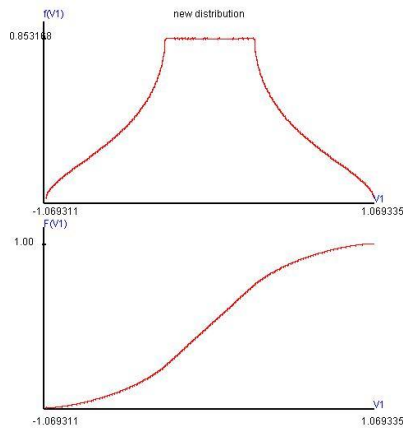


### Coefficient

Mathematical Mean:	-0.00054
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	13.71208
S.D. :	3.70298
Skewed Coef. :	-0.00277
Kurtosis Coef. :	38.92800
MAD :	1.55985
Range :	287.55532
Mid_range :	14.41596
Median :	-0.00000
Q1 :	-0.30787
Q2 :	-0.00000
Q3 :	0.30812
IQR :	0.61600
C.V. :	none

$$2.2.2) X_1, \dots, X_n \stackrel{iid}{\sim} \text{Noraml}(\mu = 5, \sigma^2 = 2^2), \hat{\gamma}_1 = \frac{\sum_{i=1}^n \left( \frac{X_i - \bar{X}}{S} \right)^3}{n},$$

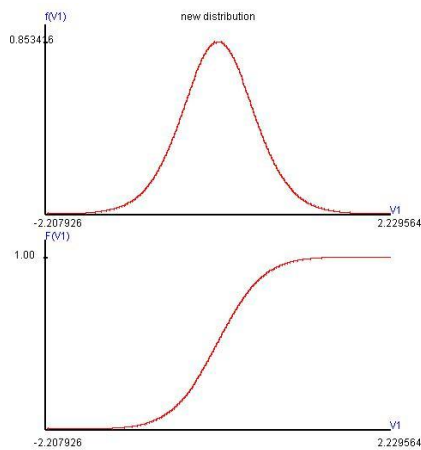
2.2.2.1) n=5  
 $f_{T_1}(t_1), F_{T_1}(t_1)$



#### Coefficient

Mathematical Mean:	-0.00002
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.19204
S.D. :	0.43822
Skewed Coef. :	0.00035
Kurtosis Coef. :	2.57140
MAD :	0.35468
Range :	2.14660
Mid_range :	0.00001
Median :	-0.00011
Q1 :	-0.29478
Q2 :	-0.00011
Q3 :	0.29474
IQR :	0.58952
C.V. :	none

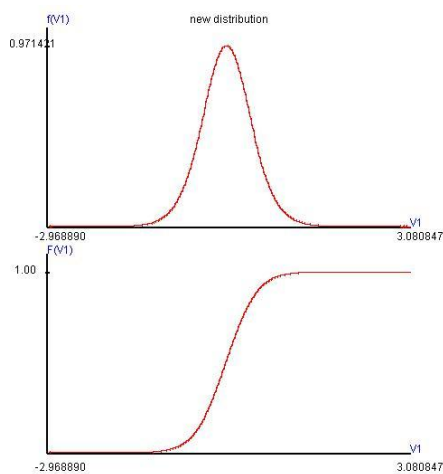
2.2.2.2) n=10  
 $f_{T_1}(t_1), F_{T_1}(t_1)$



#### Coefficient

Mathematical Mean:	0.00006
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.24467
S.D. :	0.49465
Skewed Coef. :	0.00057
Kurtosis Coef. :	3.32010
MAD :	0.38809
Range :	4.45399
Mid_range :	0.01082
Median :	-0.00002
Q1 :	-0.31855
Q2 :	-0.00002
Q3 :	0.31860
IQR :	0.63715
C.V. :	none

2.2.2.3) n=20  
 $f_{T_1}(t_1), F_{T_1}(t_1)$



#### Coefficient

Mathematical Mean:	-0.00003
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.19175
S.D. :	0.43789
Skewed Coef. :	0.00055
Kurtosis Coef. :	3.57771
MAD :	0.34179
Range :	6.07223
Mid_range :	0.05598
Median :	-0.00009
Q1 :	-0.27967
Q2 :	-0.00009
Q3 :	0.27958
IQR :	0.55925
C.V. :	none

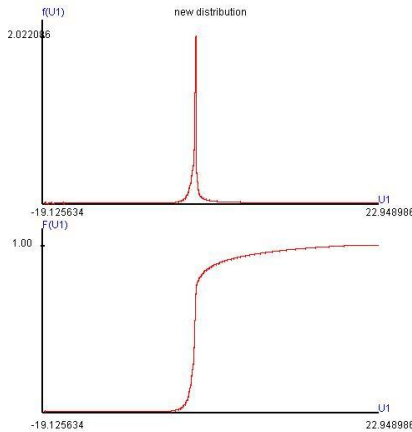
2.3)  $X_1, \dots, X_n \sim \overset{iid}{\text{Shifted\_exp\_ponential}}(\lambda, c)$ ,

2.3.1)  $X_1, \dots, X_n \overset{iid}{\sim} \text{Shifted\_exp\_ponential}(\lambda = 5, c = 1)$ ,  $U_1 = \left( \frac{X_1 - \bar{X}}{S} \right)^3$ ,

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n}, S = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}}$$

2.3.1.1) n=10

$f_{U_1}(u_1), F_{U_1}(u_1)$

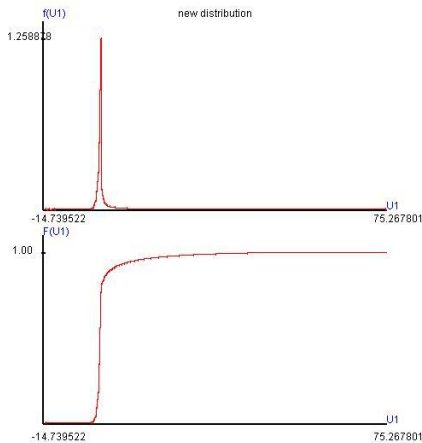


Coefficient

Mathematical Mean:	0.82932
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	11.06305
S.D. :	3.32612
Skewed Coef. :	3.42918
Kurtosis Coef. :	15.88695
MAD :	1.86203
Range :	42.23103
Mid_range :	1.91168
Median :	-0.02356
Q1 :	-0.35371
Q2 :	-0.02356
Q3 :	0.14002
IQR :	0.49372
C.V. :	4.01063

2.3.1.2) n=20

$f_{U_1}(u_1), F_{U_1}(u_1)$

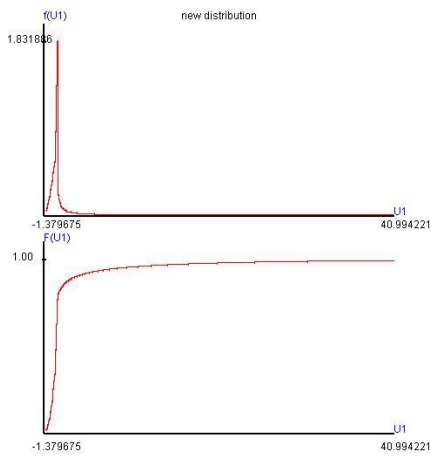


Coefficient

Mathematical Mean:	1.21904
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	30.44404
S.D. :	5.51761
Skewed Coef. :	5.59978
Kurtosis Coef. :	40.99544
MAD :	2.49334
Range :	90.34192
Mid_range :	30.26414
Median :	-0.02639
Q1 :	-0.35607
Q2 :	-0.02639
Q3 :	0.09010
IQR :	0.44617
C.V. :	4.52621

2.3.1.3) n=50

$$f_{U_1}(u_1), F_{U_1}(u_1)$$

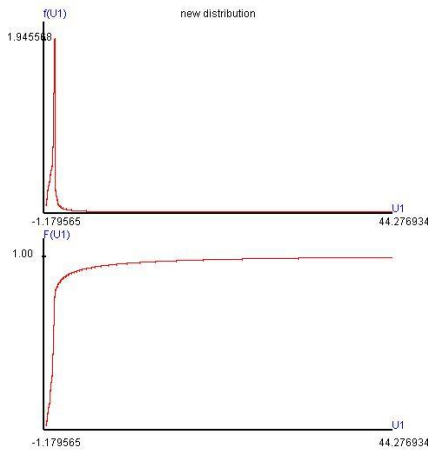


### Coefficient

Mathematical Mean:	1.58437
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	76.62661
S.D. :	8.75366
Skewed Coef. :	9.39959
Kurtosis Coef. :	125.25490
MAD :	3.10646
Range :	299.07766
Mid_range :	144.13863
Median :	-0.02798
Q1 :	-0.35816
Q2 :	-0.02798
Q3 :	0.06905
IQR :	0.42722
C.V. :	5.52502

### 2.3.1.4)n=100

$$f_{U_1}(u_1), F_{U_1}(u_1)$$



### Coefficient

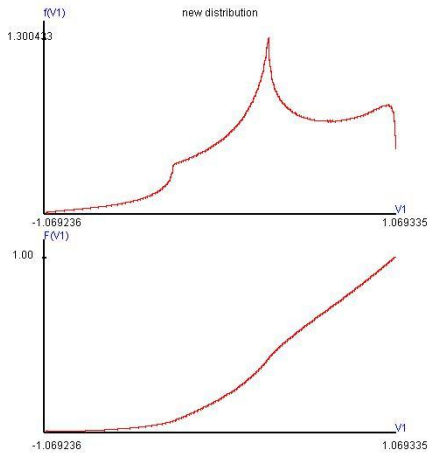
Mathematical Mean:	1.75828
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	121.99038
S.D. :	11.04493
Skewed Coef. :	13.16400
Kurtosis Coef. :	270.59026
MAD :	3.40448
Range :	735.29730
Mid_range :	363.96194
Median :	-0.02845
Q1 :	-0.35953
Q2 :	-0.02845
Q3 :	0.06314
IQR :	0.42266
C.V. :	6.28165



2.3.2)  $X_1, \dots, X_n \stackrel{iid}{\sim} \text{Shifted\_exp\_onential}(\lambda = 5, c = 1), \hat{\gamma}_1 = \frac{\sum_{i=1}^n \left( \frac{X_i - \bar{X}}{S} \right)^3}{n}$ ,

2.3.2.1) n=5

$f_{T_1}(t_1), F_{T_1}(t_1)$

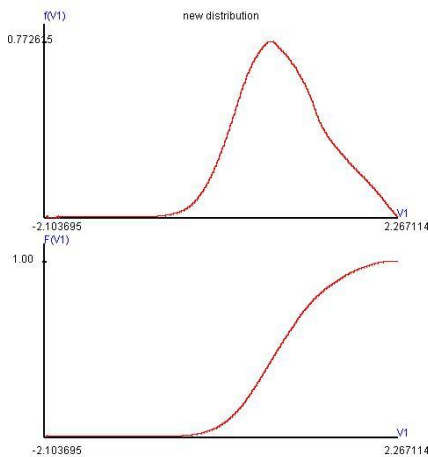


Coefficient

Mathematical Mean:	0.38280
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.17817
S.D. :	0.42210
Skewed Coef. :	-0.38377
Kurtosis Coef. :	2.64519
MAD :	0.34669
Range :	2.14652
Mid_range :	0.00005
Median :	0.38161
Q1 :	0.10376
Q2 :	0.38161
Q3 :	0.73331
IQR :	0.62956
C.V. :	1.10267

2.3.2.2) n=10

$f_{T_1}(t_1), F_{T_1}(t_1)$

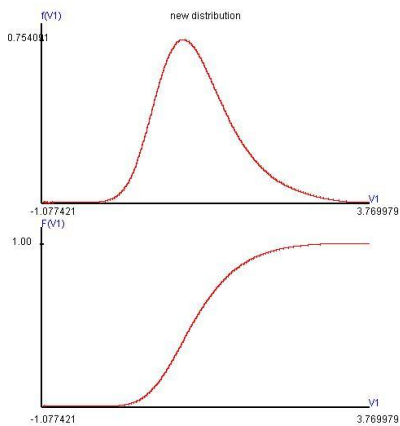


Coefficient

Mathematical Mean:	0.82948
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.27605
S.D. :	0.52541
Skewed Coef. :	0.20186
Kurtosis Coef. :	2.70224
MAD :	0.42371
Range :	4.38706
Mid_range :	0.08171
Median :	0.79324
Q1 :	0.45621
Q2 :	0.79324
Q3 :	1.17523
IQR :	0.71902
C.V. :	0.63341

2.3.2.3) n=20

$f_{T_1}(t_1), F_{T_1}(t_1)$



Coefficient

Mathematical Mean:	1.21893
Geometrical Mean :	none
Harmonic Mean :	none
Variance :	0.33908
S.D. :	0.58231
Skewed Coef. :	0.66725
Kurtosis Coef. :	3.45590
MAD :	0.45866
Range :	4.86542
Mid_range :	1.34628
Median :	1.14364
Q1 :	0.80455
Q2 :	1.14364
Q3 :	1.55678
IQR :	0.75223
C.V. :	0.47772