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ภาคผนวก

```
C*************************************************************************
C*                          PROGRAM TO COMPUTE                           *
C*        PROBABILITY OF TYPE 1 ERROR AND POWER OF THE TEST              *
C*************************************************************************
C*                     DESCRIPTION SOME VARIABLE                         *
C*      N = NUMBER OF OBSERVE                                            *
C*      SM =. SUM OF OBSERVE                                             *
C*      XMEAN =  MEAN OF OBSERVE                                         *
C*      V1 = VARIANCE OF OBSERVE                                         *
C*      A(I) =. COEFFICIENCE TABULATED IN SHAPIRO AND WILK(1965)         *
C*      XMM(I) = THE NORMAL(0,1) ORDER STSTISTIC MEDIAN                  *
C*************************************************************************
C*                  DESCRITION FUNTION AND SUBROUTINE                    *
C*  FUNTION FACT IS UDED FOR COMPUTE FACTORIAL                           *
C*  SUBROUTINE RANDUM IS USED FOR GENERATING RANDUM NUMBER               *
C*  SUBROUTINE NORMAL IS USED FOR GENERATING NORMAL DISTRIBUTION         *
C*  SUBROUTINE STUD IS USED FOR COMPUTE STANDARD NORMAL DISTRIBUTION*
C*************************************************************************
      DIMENSION X(100),A(100),XM(100),XMM(100),O(20),E(20),
     &XMID(20),UPERB(20),GLOWB(20),ASTX(100),STX(50),EE(20)
      REAL MEANT1,MEANT2
      N= 50
      XN= N
C
C     CONSTANT VALUE OF T1&T2 STATISTIC
C
      MEANT1= 0.0
      MEANT2=. 0.4523
      FACTN=. FACT(N)
      FACT3= 6.*FACT(N-3)
      FACT4= 24.*FACT(N-4)
C
C     CONSTANT VALUE OF W STATISTIC
C
      DO 180 I=.1,50
      READ(5,185)A(I)
 185  FORMAT(F5.4)
 180  CONTINUE
C
C     CONSTANT VALUE OF R STATISTIC
C
      XXN= 1./XN
      XM(N)=. (.5)**XXN
      XM(1)= 1.-XM(N)
      KR= N-1
      DO 510 I=2,KR
      AI= I
 510  XM(I)= (AI-.3175)/(XN+.365)
      DO 520 J=1,N
      IF(XM(J).GT.0.5) GO TO 550
      XM(J)=. 1.0-XM(J)
      YXM= XM(J)
      CALL STUD(YXM,Z)
      XMM(J)= (-1)*Z
      GO TO 520
 550  YXM= XM(J)
      CALL STUD(YXM,Z)
      XMM(J)= Z
 520  CONTINUE
C
```

```
C
C
      READ(5,188)VART1,VART2
  188 FORMAT(2F6.5)
      IX= 65539
      NUMBER= 0.
      T101= 0.
      T105= 0.
      T110= 0.
      T201= 0.
      T205= 0.
      T210= 0.
      U01= 0.
      U05= 0.
      U10= 0.
      W01= 0.
      W05= 0.
      W10= 0.
      R01= 0.
      R05= 0.
      R10= 0.
      C01= 0.
      C05= 0.
      C10= 0.
      READ(5,120)EX,VAR
  120 FORMAT(F3.0,F4.1)
      STD= SQRT(VAR)
      DO 999 IK=1,1000
  150 DO 140 I=1,N
      CALL NORMAL(IX,EX,STD,XX)
      X(I)= XX
  140 CONTINUE
      L1= N-1
      DO 110 J=1,L1
      I= N-J
      DO 110 K=1,I
      IF (X(K).LE.X(K+1))GO TO 110
      SAVE= X(K)
      X(K)= X(K+1)
      X(K+1)= SAVE
  110 CONTINUE
```

```
C-----------------------------------------------------------------------
C           CHI SQARE TEST
C-----------------------------------------------------------------------
C      NCELL= NUMBER OF CLASS
C      CELL= RANGE OF CLASS
C      GLOWB(I)= LOWERBOUND OF CLASS I
C      UPERB(I)= UPERBOUND OF CLASS I
C      O(I)= OBSERVE FREQUENCY OF CLASS I
C      E(I)= EXPECTED FREQUENCY OF CLASS I
C
       NCELL= 10
       XCELL= NCELL
       CELL= ((X(N)-X(1))/XCELL)+0.0001
       GLOWB(1)= X(1)
       DO 710 J=1,NCELL
       O(J)= 0.
       KK= J+1
       UPERB(J)= GLOWB(J)+CELL
       GLOWB(KK)= UPERB(J)
 710   CONTINUE
       DO 740 J=1,NCELL
       XMID(J)=(UPERB(J)-GLOWB(J))/2.
 740   CONTINUE
       SUMXM=. 0.
       SUMSXM= 0.
       SUMV= 0.
       CHIS= 0.
       DO 720 I=1,N
       IF(X(I).GE.GLOWB(1).AND.X(I).LE.UPERB(1))O(1)=O(1)+1.
       IF(X(I).GT.GLOWB(2).AND.X(I).LE.UPERB(2))O(2)=O(2)+1.
       IF(X(I).GT.GLOWB(3).AND.X(I).LE.UPERB(3))O(3)=O(3)+1.
       IF(X(I).GT.GLOWB(4).AND.X(I).LE.UPERB(4))O(4)=O(4)+1.
       IF(X(I).GT.GLOWB(5).AND.X(I).LE.UPERB(5))O(5)=O(5)+1.
       IF(X(I).GT.GLOWB(6).AND.X(I).LE.UPERB(6))O(6)=O(6)+1.
       IF(X(I).GT.GLOWB(7).AND.X(I).LE.UPERB(7))O(7)=O(7)+1.
       IF(X(I).GT.GLOWB(8).AND.X(I).LE.UPERB(8))O(8)=O(8)+1.
       IF(X(I).GT.GLOWB(9).AND.X(I).LE.UPERB(9))O(9)=O(9)+1.
       IF(X(I).GT.GLOWB(10).AND.X(I).LE.UPERB(10))O(10)=O(10)+1.
 720   CONTINUE
       DO 730 J=1,NCELL
       SUMSXM= SUMSXM+(O(J)*(XMID(J)**2))
 730   SUMXM=. SUMXM+(O(J)*XMID(J))
       XMMEAN=. SUMXM/XN
       SUMV= SUMSXM-(XN*(XMMEAN**2))
       VARXM= SUMV/(XN-1.)
       SUB= SQRT(VARXM)
       DO 750 J=1,NCELL
       STX(J)= (UPERB(J)-XMMEAN)/SUB
       STXX= STX(J)
       ASTX(J)= ABS(STXX)
       T1UB= 1.0/(1.0+0.2316419*ASTX(J))
       DZUB= 0.3989423*EXP(-STX(J)*STX(J)/2.)
       PUB= 1.0-DZUB*T1UB*((((1.330274*T1UB-1.821256)*T1UB+1.781478)*
     &T1UB-0.3565638)*T1UB+0.3193815)
       IF(STX(J))711,722,722
 711   PUB= 1.0-PUB
 722   EE(J)= PUB*XN
 750   CONTINUE
       IMM= NCELL-1
```

```
      E(1)= EE(1)
      DO 111 I=1,IMM
      E(I+1)= EE(I+1)-EE(I)
111   CONTINUE
      LT5= 0
      DO 77 J=1,NCELL
      IF(O(J).LT.5.)LT5=LT5+1
77    CONTINUE
      KC= NCELL
      IF(LT5.LE.2)GO TO 78
      KCELL= 0
      DO 73 J=1,NCELL
      IF(O(J).LT.5.)GO TO 71
      GO TO 73
71    KCELL= KCELL+1
      JADD= J+1
      JDEL= J-1
      IF(KCELL.EQ.1.AND.J.EQ.11)GO TO 74
      IF(KCELL.EQ.2.AND.J.EQ.10)GO TO 74
      IF(KCELL.EQ.3.AND.J.EQ.7)GO TO 74
      IF(KCELL.EQ.4.AND.J.EQ.6)GO TO 74
      IF(KCELL.EQ.5.AND.J.EQ.5)GO TO 74
      IF(KCELL.EQ.2.AND.J.EQ.9)GO TO 75
      IF(KCELL.EQ.3.AND.J.EQ.8)GO TO 75
      IF(KCELL.EQ.4.AND.J.EQ.7)GO TO 75
      IF(KCELL.EQ.5.AND.J.EQ.6)GO TO 75
      IF(KCELL.EQ.6.AND.J.EQ.5)GO TO 75
      O(J)= O(J)+O(JADD)
      E(J)= E(J)+E(JADD)
      UPERB(J)= UPERB(JADD)
      KC= NCELL-KCELL
      DO 72 L=JADD,KC
      O(L)= O(L+1)
      E(L)= E(L+1)
      UPERB(L)= UPERB(L+1)
72    CONTINUE
      IF(O(J).LT.5.)GO TO 71
73    CONTINUE
      GO TO 78
74    O(J)= O(J)+O(JADD)
      E(J)= E(J)+E(JADD)
      UPERB(J)= UPERB(JADD)
      IF(O(J).LT.5.)GO TO 76
      KC= NCELL-KCELL
      GO TO 78
76    O(JDEL)= O(JDEL)+O(J)
      E(JDEL)= E(JDEL)+E(J)
      UPERB(JDEL)= UPERB(J)
      KC= NCELL-KCELL-1
      GO TO 78
75    O(JDEL)= O(JDEL)+O(J)
      E(JDEL)= E(JDEL)+E(J)
      UPERB(JDEL)= UPERB(J)
      KC= NCELL-KCELL
78    CK= KC
      DO 755 J=1,KC
```

```
      CHIS= CHIS+((O(J)-E(J))**2)/E(J)
  755 CONTINUE
      IF(KC.EQ.10)GO TO 771
      IF(KC.EQ.9)GO TO 772
      IF(KC.EQ.8)GO TO 773
      IF(KC.EQ.7)GO TO 774
      IF(KC.EQ.6)GO TO 775
      IF(KC.EQ.5)GO TO 776
C
C     CHI SQARE DF10-3=7
C
  771 IF(CHIS.GT.18.475)C01=C01+1.
      IF(CHIS.GT.14.067)C05=C05+1.
      IF(CHIS.GT.12.017)C10=C10+1.
      GO TO 900
C
C     CHI SQARE DF9-3=6
C
  772 IF(CHIS.GT.16.812)C01=C01+1.
      IF(CHIS.GT.12.592)C05=C05+1.
      IF(CHIS.GT.10.645)C10=C10+1.
      GO TO 900
C
C     CHI SQARE DF8-3=5
C
  773 IF(CHIS.GT.15.086)C01=C01+1.
      IF(CHIS.GT.11.070)C05=C05+1.
      IF(CHIS.GT.9.236)C10=C10+1.
      GO TO 900
C
C     CHI SQARE DF7-3=4
C
  774 IF(CHIS.GT.13.227)C01=C01+1.
      IF(CHIS.GT.9.488)C05=C05+1.
      IF(CHIS.GT.7.779)C10=C10+1.
      GO TO 900
C
C     CHI SQARE DF6-3=3
C
  775 IF(CHIS.GT.11.345)C01=C01+1.
      IF(CHIS.GT.7.815)C05=C05+1.
      IF(CHIS.GT.6.251)C10=C10+1.
      GO TO 900
C
C     CHI SQARE DF5-3=2
C
  776 IF(CHIS.GT.9.210)C01=C01+1.
      IF(CHIS.GT.5.991)C05=C05+1.
      IF(CHIS.GT.4.605)C10=C10+1.
```

```
C-----------------------------------------------------------------------
C              STUDENTIZED RANGE TEST (U-STATISTIC)
C-----------------------------------------------------------------------
 900   SM= 0.
       SX= 0.
       V1= 0.
       DO 210 I=1,N
 210   SM= SM+X(I)
       XMEAN= SM/XN
       DO 220 I=1,N
       QQ= (X(I)-XMEAN)**2
 220   V1= V1+QQ
       VX= V1/(XN-1.)
       SD= SQRT(VX)
       U= (X(N)-X(1))/SD
       IF(U.GT.5.40.OR.U.LT.3.21)U01=U01+1.
       IF(U.GT.5.06.OR.U.LT.3.37)U05=U05+1.
       IF(U.GT.4.89.OR.U.LT.3.47)U10=U10+1.
C-----------------------------------------------------------------------
C              SHAPIRO-WILK STATISTIC (W-STATISTIC)
C-----------------------------------------------------------------------
       B= 0.
       K= N/2
       DO 310 I=1,K
       NN= N-I+1
 310   B= B+A(NN)*(X(NN)-X(I))
       W= B**2/V1
       IF(W.LT.0.900)W01=W01+1.
       IF(W.LT.0.927)W05=W05+1.
       IF(W.LT.0.937)W10=W10+1.
C-----------------------------------------------------------------------
C      PROBABILITY PLOT CORRELATION COEFFICIENT TEST(R-STATISTIC)
C-----------------------------------------------------------------------
       SUMMX= 0.
       SUMM2= 0.
       DO 530 K=1,N
       SUMMX= SUMMX+(XMM(K)*X(K))
 530   SUMM2= SUMM2+(XMM(K)**2)
       AAA= SUMM2*V1
       R= SUMMX/SQRT(AAA)
       IF(R.LT.0.947)R01=R01+1.
       IF(R.LT.0.964)R05=R05+1.
       IF(R.LT.0.970)R10=R10+1.
```

```
C-----------------------------------------------------------------------
C            HANNU OJA STATISTIC(T1&T2 STATISTIC)
C-----------------------------------------------------------------------
      T1= 0.
      T21= 0.
      T22= 0.
      T23= 0.
      T24= 0.
      L2= N-1
      DO 410 I=1,L2
      L3= I+1
      DO 410 J=L3,N
      XI= I
      XJ= J
      DIF= X(J)-X(I)
      LDIF= ALOG10(DIF)
      T1= T1+(XI+XJ-XN-1.0)*FACT3/FACTN*LDIF
      IF(N-J.LT.2.AND.I-1.LT.2) GO TO 420
      IF(N-J.LT.2) GO TO 421
      IF(I-1.LT.2) GO TO 422
      T21= T21+FACT4/FACTN*((2.*(XN-XJ)*(XI-1.))-(FACT(N-J)/(2.*FACT
     &(N-J-2)))-(FACT(I-1)/(2.*FACT(I-3))))*LDIF
      GO TO 410
  420 T22= T22+FACT4/FACTN*(2.*(XN-XJ)*(XI-1.))*LDIF
      GO TO 410
  421 T23= T23+FACT4/FACTN*((2.*(XN-XJ)+(XI-1.))-(FACT(I-1)/(2.*FACT
     &(I-3))))*LDIF
      GO TO 410
  422 T24= T24+FACT4/FACTN*((2.*(XN-XJ)*(XI-1.))-(FACT(N-J)/(2.*FACT
     &(N-J-2))))*LDIF
  410 CONTINUE
      T2= T21+T22+T23+T24
      ZT1= (T1-MEANT1)/SQRT(VART1)
      IF(ZT1.GT.2.57.OR.ZT1.LT.(-2.57))T101=T101+1.
      IF(ZT1.GT.1.96.OR.ZT1.LT.(-1.96))T105=T105+1.
      IF(ZT1.GT.1.64.OR.ZT1.LT.(-1.64))T110=T110+1.
      ZT2= (T2-MEANT2)/SQRT(VART2)
      IF(ZT2.GT.2.57.OR.ZT2.LT.(-2.57))T201=T201+1.
      IF(ZT2.GT.1.96.OR.ZT2.LT.(-1.96))T205=T205+1.
      IF(ZT2.GT.1.64.OR.ZT2.LT.(-1.64))T210=T210+1.
  999 CONTINUE
```

```
C
C       COMPUTE POWER OR TYPE 1 ERROR
C
        PT101= T101/1000.
        PT105= T105/1000.
        PT110= T110/1000.
        PT201= T201/1000.
        PT205= T205/1000.
        PT210= T210/1000.
        PU01= U01/1000.
        PU05= U05/1000.
        PU10= U10/1000.
        PW01= W01/1000.
        PW05= W05/1000.
        PW10= W10/1000.
        PR01= R01/1000.
        PR05= R05/1000.
        PR10= R10/1000.
        PC01= C01/1000.
        PC05= C05/1000.
        PC10= C10/1000.
        WRITE(6,810)
  810   FORMAT(20X,'SIG01',10X,'SIG05',10X,'SID10',/)
        WRITE(6,830)PT101,PT105,PT110
  830   FORMAT(3X,'T1-STATISTIC',5X,F5.3,10X,F5.3,10X,F5.3)
        WRITE(6,835)PT201,PT205,PT210
  835   FORMAT(3X,'T2-STATISTIC',5X,F5.3,10X,F5.3,10X,F5.3)
        WRITE(6,815)PU01,PU05,PU10
  815   FORMAT(3X,'U-STATISTIC',6X,F5.3,10X,F5.3,10X,F5.3)
        WRITE(6,820)PW01,PW05,PW10
  820   FORMAT(3X,'W-STATISTIC',6X,F5.3,10X,F5.3,10X,F5.3)
        WRITE(6,840)PR01,PR05,PR10
  840   FORMAT(3X,'R-STATISTIC',6X,F5.3,10X,F5.3,10X,F5.3)
        WRITE(6,841)PC01,PC05,PC10
  841   FORMAT(3X,'CHI-STATISTIC',7X,F5.3,10X,F5.3,10X,F5.3)
        STOP
        END
```

```
C
C
      FUNCTION FACT(IN)
      FACT= 1.0
      IF(IN.EQ.0)GO TO 666
      DO 610 K=1,IN
      FK= K
  610 FACT= FACT*FK
  666 RETURN
      END
C
C
      SUBROUTINE RANDUM(IX,IY,RN)
      IY= IX*65539
      IF(IY)3,4,4
    3 IY= IY+2147483647+1
    4 RN= IY
      RN= RN*.4656613E-9
      IX= IY
      RETURN
      END
C
C
      SUBROUTINE NORMAL(IX,EX,STD,X)
      A= 0.
      DO 3 I=1,12
      CALL RANDUM(IX,IY,RN)
    3 A= A+RN
      X= EX+(A-6.0)*STD
      RETURN
      END
C
C
      SUBROUTINE STUD(YXM,Z)
      Z= 0.
  234 T1= 1.0/(1.0+0.2316419*Z)
      DZ= 0.3989423*EXP(-Z*Z/2.0)
      P= 1.0-DZ*T1*((((1.330274*T1-1.821256)*T1+1.781478)*T1
     &-0.3565688)*T1+0.3198815)
  345 IF(P.GE.YXM)GO TO 123
      Z= Z+0.001
      GO TO 234
  123 RETURN
      END
```

แสดงโปรแกรมย่อยสำหรับสร้างเลขสุ่ม

```
      SUBROUTINE RANDUM(IX,IY,RN)
      IY=IX*65539
      IF(IY)3,4,4
3     IY=IY+2147483647+1
4     RN=IY
      RN=RN*.4656613E-9
      IX=IY
      RETURN
      END
```

แสดงโปรแกรมย่อยสำหรับสร้างข้อมูลที่มีการแจกแจงแบบปกติ

```
      SUBROUTINE NORMAL(IX,EX,STD,X)
      A=0.
      DO 3 I=1,12
      CALL RANDUM(IX,IY,RN)
3     A=A+RN
      X=EX+(A-6.0)*STD
      RETURN
      END
```

แสดงโปรแกรมย่อยสำหรับสร้างข้อมูลที่มีการแจกแจงแบบเบ้

```
      SUBROUTINE SKEWED(IX,RLM1,RLM2,RLM3,RLM4,EX,STD,X)
      CALL RANDUM(IX,IY,RN)
      R1=RLM3*ALOG(RN)
      R2=RLM4*ALOG(1-RN)
      RX1=EXP(R1)
      RX2=EXP(R2)
      X1=RLM1+(RX1-RX2)/RLM2
      X=EX+STD*X1
      RETURN
      END
```

แสดงโปรแกรมย่อยสำหรับสร้างข้อมูลที่มีการแจกแจงแบบปกติปลอมปน

```
      SUBROUTINE SCNRML(IX,C,P,EX,STD,X)
      CSTD=C*STD
      CALL RANDUM(IX,IY,RN)
      IF(RN-P)4,4,5
4     CALL NORMAL(IX,EX,CSTD,X)
      GO TO 44
5     CALL NORMAL(IX,EX,STD,X)
44    RETURN
      END
```

แสดงโปรแกรมย่อยสำหรับคำนวณค่า Z

```
      SUBROUTINE STUD(YXM,Z)
      Z=0.0
234   T1=1.0/(1.0+0.2316419*Z)
      DZ=0.3989423*EXP(-Z*Z/2.0)
      P=1.0-DZ*T1*((((1.330274*T1-1.821256)*T1+1.781478)*T1-0.3565688)*
     &T1+0.3198815)
345   IF(P.GE.YXM)GO TO 123
      Z=Z+0.001
      GO TO 234
123   RETURN
      END
```

หมายเหตุ จาก IBM APPLICATION PROGRAM SYSTEM/360 SCIENTIFIES SUBROUTING PACKAGE (360 A-CM-03X) VERSION III (STANDARD NORMAL DISTRIBUTION)

ตารางที่ 1 Percentage points of the distribution of u = w/s

Size of sample n	Lower percentage points						Upper percentage points					
	0·0	0·5	1·0	2·5	5·0	10·0	10·0	5·0	2·5	1·0	0·5	0·0
3	1·732	1·735	1·737	1·745	1·758	1·782	1·997	1·999	2·000	2·000	2·000	2·000
4	1·732	1·83	1·87	1·93	1·98	2·04	2·409	2·429	2·439	2·445	2·447	2·449
5	1·826	1·98	2·02	2·09	2·15	2·22	2·712	2·753	2·782	2·803	2·813	2·828
6	1·826	2·11	2·15	2·22	2·28	2·37	2·949	3·012	3·056	3·095	3·115	3·162
7	1·871	2·22	2·26	2·33	2·40	2·49	3·143	3·222	3·282	3·338	3·369	3·464
8	1·871	2·31	2·35	2·43	2·50	2·59	3·308	3·399	3·471	3·543	3·585	3·742
9	1·897	2·39	2·44	2·51	2·59	2·68	3·449	3·552	3·634	3·720	3·772	4·000
10	1·897	2·46	2·51	2·59	2·67	2·76	3·57	3·685	3·777	3·875	3·935	4·243
11	1·915	2·53	2·58	2·66	2·74	2·84	3·68	3·80	3·903	4·012	4·079	4·472
12	1·915	2·59	2·64	2·72	2·80	2·90	3·78	3·91	4·02	4·134	4·208	4·690
13	1·927	2·64	2·70	2·78	2·86	2·96	3·87	4·00	4·12	4·244	4·325	4·899
14	1·927	2·70	2·75	2·83	2·92	3·02	3·95	4·09	4·21	4·34	4·431	5·099
15	1·936	2·74	2·80	2·88	2·97	3·07	4·02	4·17	4·29	4·44	4·53	5·292
16	1·936	2·79	2·84	2·93	3·01	3·12	4·09	4·24	4·37	4·52	4·62	5·477
17	1·944	2·83	2·88	2·97	3·06	3·17	4·15	4·31	4·44	4·60	4·70	5·657
18	1·944	2·87	2·92	3·01	3·10	3·21	4·21	4·37	4·51	4·67	4·78	5·831
19	1·949	2·90	2·96	3·05	3·14	3·25	4·27	4·43	4·57	4·74	4·85	6·000
20	1·949	2·94	2·99	3·09	3·18	3·29	4·32	4·49	4·63	4·80	4·91	6·164
25	1·961	3·09	3·15	3·24	3·34	3·45	4·53	4·71	4·87	5·06	5·19	6·93
30	1·966	3·21	3·27	3·37	3·47	3·59	4·70	4·89	5·06	5·26	5·40	7·62
35	1·972	3·32	3·38	3·48	3·58	3·70	4·84	5·04	5·21	5·42	5·57	8·25
40	1·975	3·41	3·47	3·57	3·67	3·79	4·96	5·16	5·34	5·56	5·71	8·83
45	1·978	3·49	3·55	3·66	3·75	3·88	5·06	5·26	5·45	5·67	5·83	9·38
50	1·980	3·56	3·62	3·73	3·83	3·95	5·14	5·35	5·54	5·77	5·93	9·90
55	1·982	3·62	3·69	3·80	3·90	4·02	5·22	5·43	5·63	5·86	6·02	10·39
60	1·983	3·68	3·75	3·86	3·96	4·08	5·29	5·51	5·70	5·94	6·10	10·86
65	1·985	3·74	3·80	3·91	4·01	4·14	5·35	5·57	5·77	6·01	6·17	11·31
70	1·986	3·79	3·85	3·96	4·06	4·19	5·41	5·63	5·83	6·07	6·24	11·75
75	1·987	3·83	3·90	4·01	4·11	4·24	5·46	5·68	5·88	6·13	6·30	12·17
80	1·987	3·88	3·94	4·05	4·16	4·28	5·51	5·73	5·93	6·18	6·35	12·57
85	1·988	3·92	3·99	4·09	4·20	4·33	5·56	5·78	5·98	6·23	6·40	12·96
90	1·989	3·96	4·02	4·13	4·24	4·36	5·60	5·82	6·03	6·27	6·45	13·34
95	1·990	3·99	4·06	4·17	4·27	4·40	5·64	5·86	6·07	6·32	6·49	13·71
100	1·990	4·03	4·10	4·21	4·31	4·44	5·68	5·90	6·11	6·36	6·53	14·07
150	1·993	4·32	4·38	4·48	4·59	4·72	5·96	6·18	6·39	6·64	6·82	17·26
200	1·995	4·53	4·59	4·68	4·78	4·90	6·15	6·39	6·60	6·84	7·01	19·95
500	1·998	5·06	5·13	5·25	5·37	5·49	6·72	6·94	7·15	7·42	7·60	31·59
1000	1·999	5·50	5·57	5·68	5·79	5·92	7·11	7·33	7·54	7·80	7·99	44·70

ตารางที่ 2 Coefficients $\{ a_{n-i+1} \}$ for the W test for normality, for n = 2(1) 50.

i \ n	2	3	4	5	6	7	8	9	10
1	0·7071	0·7071	0·6872	0·6646	0·6431	0·6233	0·6052	0·5888	0·5739
2	—	·0000	·1677	·2413	·2806	·3031	·3164	·3244	·3291
3	—	—	—	·0000	·0875	·1401	·1743	·1976	·2141
4	—	—	—	—	—	·0000	·0561	·0947	·1224
5	—	—	—	—	—	—	—	·0000	·0399

i \ n	11	12	13	14	15	16	17	18	19	20
1	0·5601	0·5475	0·5359	0·5251	0·5150	0·5056	0·4968	0·4886	0·4808	0·4734
2	·3315	·3325	·3325	·3318	·3306	·3290	·3273	·3253	·3232	·3211
3	·2260	·2347	·2412	·2460	·2495	·2521	·2540	·2553	·2561	·2565
4	·1429	·1586	·1707	·1802	·1878	·1939	·1988	·2027	·2059	·2085
5	·0695	·0922	·1099	·1240	·1353	·1447	·1524	·1587	·1641	·1686
6	0·0000	0·0303	0·0539	0·0727	0·0880	0·1005	0·1109	0·1197	0·1271	0·1334
7	—	—	·0000	·0240	·0433	·0593	·0725	·0837	·0932	·1013
8	—	—	—	—	·0000	·0196	·0359	·0496	·0612	·0711
9	—	—	—	—	—	—	·0000	·0163	·0303	·0422
10	—	—	—	—	—	—	—	—	·0000	·0140

i \ n	21	22	23	24	25	26	27	28	29	30
1	0·4643	0·4590	0·4542	0·4493	0·4450	0·4407	0·4366	0·4328	0·4291	0·4254
2	·3185	·3156	·3126	·3098	·3069	·3043	·3018	·2992	·2968	·2944
3	·2578	·2571	·2563	·2554	·2543	·2533	·2522	·2510	·2499	·2487
4	·2119	·2131	·2139	·2145	·2148	·2151	·2152	·2151	·2150	·2148
5	·1736	·1764	·1787	·1807	·1822	·1836	·1848	·1857	·1864	·1870
6	0·1399	0·1443	0·1480	0·1512	0·1539	0·1563	0·1584	0·1601	0·1616	0·1630
7	·1092	·1150	·1201	·1245	·1283	·1316	·1346	·1372	·1395	·1415
8	·0804	·0878	·0941	·0997	·1046	·1089	·1128	·1162	·1192	·1219
9	·0530	·0618	·0696	·0764	·0823	·0876	·0923	·0965	·1002	·1036
10	·0263	·0368	·0459	·0539	·0610	·0672	·0728	·0778	·0822	·0862
11	0·0000	0·0122	0·0228	0·0321	0·0403	0·0476	0·0540	0·0598	0·0650	0·0697
12	—	—	·0000	·0107	·0200	·0284	·0358	·0424	·0483	·0537
13	—	—	—	—	·0000	·0094	·0178	·0253	·0320	·0381
14	—	—	—	—	—	—	·0000	·0084	·0159	·0227
15	—	—	—	—	—	—	—	—	·0000	·0076

ตารางที่ 2 (ต่อ) Coefficients $\{ a_{n-i+1} \}$ for the W test for normality,

for n = 2(1) 50

i \ n	31	32	33	34	35	36	37	38	39	40
1	0·4220	0·4188	0·4156	0·4127	0·4096	0·4068	0·4040	0·4015	0·3989	0·3964
2	·2921	·2898	·2876	·2854	·2834	·2813	·2794	·2774	·2755	·2737
3	·2475	·2463	·2451	·2439	·2427	·2415	·2403	·2391	·2380	·2368
4	·2145	·2141	·2137	·2132	·2127	·2121	·2116	·2110	·2104	·2098
5	·1874	·1878	·1880	·1882	·1883	·1883	·1883	·1881	·1880	·1878
6	0·1641	0·1651	0·1660	0·1667	0·1673	0·1678	0·1683	0·1686	0·1689	0·1691
7	·1433	·1449	·1463	·1475	·1487	·1496	·1505	·1513	·1520	·1526
8	·1243	·1265	·1284	·1301	·1317	·1331	·1344	·1356	·1366	·1376
9	·1066	·1093	·1118	·1140	·1160	·1179	·1196	·1211	·1225	·1237
10	·0899	·0931	·0961	·0988	·1013	·1036	·1056	·1075	·1092	·1108
11	0·0739	0·0777	0·0812	0·0844	0·0873	0·0900	0·0924	0·0947	0·0967	0·0986
12	·0585	·0629	·0669	·0706	·0739	·0770	·0793	·0824	·0848	·0870
13	·0435	·0485	·0530	·0572	·0610	·0645	·0677	·0706	·0733	·0759
14	·0289	·0344	·0395	·0441	·0484	·0523	·0559	·0592	·0622	·0651
15	·0144	·0206	·0262	·0314	·0361	·0404	·0444	·0481	·0515	·0546
16	0·0000	0·0068	0·0131	0·0187	0·0239	0·0287	0·0331	0·0372	0·0409	0·0444
17	—	—	·0000	·0062	·0119	·0172	·0220	·0264	·0305	·0343
18	—	—	—	—	·0000	·0057	·0110	·0158	·0203	·0244
19	—	—	—	—	—	—	·0000	·0053	·0101	·0146
20	—	—	—	—	—	—	—	—	·0000	·0049

i \ n	41	42	43	44	45	46	47	48	49	50
1	0·3940	0·3917	0·3894	0·3872	0·3850	0·3830	0·3808	0·3789	0·3770	0·3751
2	·2719	·2701	·2684	·2667	·2651	·2635	·2620	·2604	·2589	·2574
3	·2357	·2345	·2334	·2323	·2313	·2302	·2291	·2281	·2271	·2260
4	·2091	·2085	·2078	·2072	·2065	·2058	·2052	·2045	·2038	·2032
5	·1876	·1874	·1871	·1868	·1865	·1862	·1859	·1855	·1851	·1847
6	0·1693	0·1694	0·1695	0·1695	0·1695	0·1695	0·1695	0·1693	0·1692	0·1691
7	·1531	·1535	·1539	·1542	·1545	·1548	·1550	·1551	·1553	·1554
8	·1384	·1392	·1398	·1405	·1410	·1415	·1420	·1423	·1427	·1430
9	·1249	·1259	·1269	·1278	·1286	·1293	·1300	·1306	·1312	·1317
10	·1123	·1136	·1149	·1160	·1170	·1180	·1189	·1197	·1205	·1212
11	0·1004	0·1020	0·1035	0·1049	0·1062	0·1073	0·1085	0·1095	0·1105	0·1113
12	·0891	·0909	·0927	·0943	·0959	·0972	·0986	·0998	·1010	·1020
13	·0782	·0804	·0824	·0842	·0860	·0876	·0892	·0906	·0919	·0932
14	·0677	·0701	·0724	·0745	·0765	·0783	·0801	·0817	·0832	·0846
15	·0575	·0602	·0628	·0651	·0673	·0694	·0713	·0731	·0748	·0764
16	0·0476	0·0506	0·0534	0·0560	0·0584	0·0607	0·0628	0·0648	0·0667	0·0685
17	·0379	·0411	·0442	·0471	·0497	·0522	·0546	·0568	·0588	·0608
18	·0283	·0318	·0352	·0383	·0412	·0439	·0465	·0489	·0511	·0532
19	·0188	·0227	·0263	·0296	·0328	·0357	·0385	·0411	·0436	·0459
20	·0094	·0136	·0175	·0211	·0245	·0277	·0307	·0335	·0361	·0386
21	0·0000	0·0045	0·0087	0·0126	0·0163	0·0197	0·0229	0·0259	0·0288	0·0314
22		—	·0000	·0042	·0081	·0118	·0153	·0185	·0215	·0244
23	—	—	—	—	·0000	·0039	·0076	·0111	·0143	·0174
24	—	—	—	—	—	—	·0000	·0037	·0071	·0104
25	—	—	—	—	—	—	—	—	·0000	·0035

ตารางที่ 3 Percentage points of the W test* for n = 3(1) 50

	Level								
n	0·01	0·02	0·05	0·10	0·50	0·90	0·95	0·98	0·99
3	0·753	0·756	0·767	0·789	0·959	0·998	0·999	1·000	1·000
4	·687	·707	·748	·792	·935	·987	·992	·996	·997
5	·686	·715	·762	·806	·927	·979	·986	·991	·993
6	0·713	0·743	0·788	0·826	0·927	0·974	0·981	0·986	0·989
7	·730	·760	·803	·838	·928	·972	·979	·985	·988
8	·749	·778	·818	·851	·932	·972	·978	·984	·987
9	·764	·791	·829	·859	·935	·972	·978	·984	·986
10	·781	·806	·842	·869	·938	·972	·978	·983	·986
11	0·792	0·817	0·850	0·876	0·940	0·973	0·979	0·984	0·986
12	·805	·828	·859	·883	·943	·973	·979	·984	·986
13	·814	·837	·866	·889	·945	·974	·979	·984	·986
14	·825	·846	·874	·895	·947	·975	·980	·984	·986
15	·835	·855	·881	·901	·950	·975	·980	·984	·987
16	0·844	0·863	0·887	0·906	0·952	0·976	0·981	0·985	0·987
17	·851	·869	·892	·910	·954	·977	·981	·985	·987
18	·858	·874	·897	·914	·956	·978	·982	·986	·988
19	·863	·879	·901	·917	·957	·978	·982	·986	·988
20	·868	·884	·905	·920	·959	·979	·983	·986	·988
21	0·873	0·888	0·908	0·923	0·960	0·980	0·983	0·987	0·989
22	·878	·892	·911	·926	·961	·980	·984	·987	·989
23	·881	·895	·914	·928	·962	·981	·984	·987	·989
24	·884	·898	·916	·930	·963	·981	·984	·987	·989
25	·888	·901	·918	·931	·964	·981	·985	·988	·989
26	0·891	0·904	0·920	0·933	0·965	0·982	0·985	0·988	0·989
27	·894	·906	·923	·935	·965	·982	·985	·988	·990
28	·896	·908	·924	·936	·966	·982	·985	·988	·990
29	·898	·910	·926	·937	·966	·982	·985	·988	·990
30	·900	·912	·927	·939	·967	·983	·985	·988	·900
31	0·902	0·914	0·929	0·940	0·967	0·983	0·986	0·988	0·990
32	·904	·915	·930	·941	·968	·983	·986	·988	·990
33	·906	·917	·931	·942	·968	·983	·986	·989	·990
34	·908	·919	·933	·943	·969	·983	·986	·989	·990
35	·910	·920	·934	·944	·969	·984	·986	·989	·990
36	0·912	0·922	0·935	0·945	0·970	0·984	0·986	0·989	0·990
37	·914	·924	·936	·946	·970	·984	·987	·989	·990
38	·916	·925	·938	·947	·971	·984	·987	·989	·990
39	·917	·927	·939	·948	·971	·984	·987	·989	·991
40	·919	·928	·940	·949	·972	·985	·987	·989	·991
41	0·920	0·929	0·941	0·950	0·972	0·985	0·987	0·989	0·991
42	·922	·930	·942	·951	·972	·985	·987	·989	·991
43	·923	·932	·943	·951	·973	·985	·987	·990	·991
44	·924	·933	·944	·952	·973	·985	·987	·990	·991
45	·926	·934	·945	·953	·973	·985	·988	·990	·991
46	0·927	0·935	0·945	0·953	0·974	0·985	0·988	0·990	0·991
47	·928	·936	·946	·954	·974	·985	·988	·990	·991
48	·929	·937	·947	·954	·974	·985	·988	·990	·991
49	·929	·937	·947	·955	·974	·985	·988	·990	·991
50	·930	·938	·947	·955	·974	·985	·988	·990	·991

* Based on fitted Johnson (1949) S_B approximation, see Shapiro & Wilk (1965*a*) for details.

ตารางที่ 4 Percent points of the normal probability plot correlation coefficient r

	Level												
n	.000	.005	.01	.025	.05	.10	.25	.50	.75	.90	.95	.975	.99	.995
3	.366	.867	.869	.872	.879	.891	.924	.966	.991	.999	1.000	1.000	1.000	1.000
4	.784	.813	.822	.845	.868	.894	.931	.958	.979	.992	.996	.998	.999	1.000
5	.726	.803	.822	.855	.879	.902	.935	.960	.977	.988	.992	.995	.997	.998
6	.683	.818	.835	.868	.890	.911	.940	.962	.977	.986	.990	.993	.996	.997
7	.648	.828	.847	.876	.899	.916	.944	.965	.978	.986	.990	.992	.995	.996
8	.619	.841	.859	.886	.905	.924	.948	.967	.979	.986	.990	.992	.995	.996
9	.595	.851	.868	.893	.912	.929	.951	.968	.980	.987	.990	.992	.994	.995
10	.574	.860	.876	.900	.917	.934	.954	.970	.981	.987	.990	.992	.994	.995
11	.556	.868	.883	.906	.922	.938	.957	.972	.982	.988	.990	.992	.994	.995
12	.539	.875	.889	.912	.926	.941	.959	.973	.982	.988	.990	.992	.994	.995
13	.525	.882	.895	.917	.931	.944	.962	.975	.983	.988	.991	.993	.994	.995
14	.512	.888	.901	.921	.934	.947	.964	.976	.984	.989	.991	.993	.994	.995
15	.500	.894	.907	.925	.937	.950	.965	.977	.984	.989	.991	.993	.994	.995
16	.489	.899	.912	.928	.940	.952	.967	.978	.985	.989	.991	.993	.994	.995
17	.478	.903	.916	.931	.942	.954	.968	.979	.986	.990	.992	.993	.994	.995
18	.469	.907	.919	.934	.945	.956	.969	.979	.986	.990	.992	.993	.995	.995
19	.460	.909	.923	.937	.947	.958	.971	.980	.987	.990	.992	.993	.995	.995
20	.452	.912	.925	.939	.950	.960	.972	.981	.987	.991	.992	.994	.995	.995
21	.445	.914	.928	.942	.952	.961	.973	.981	.987	.991	.993	.994	.995	.996
22	.437	.918	.930	.944	.954	.962	.974	.982	.988	.991	.993	.994	.995	.996
23	.431	.922	.933	.947	.955	.964	.975	.983	.988	.991	.993	.994	.995	.996
24	.424	.926	.936	.949	.957	.965	.975	.983	.988	.992	.993	.994	.995	.996
25	.418	.928	.937	.950	.958	.966	.976	.984	.989	.992	.993	.994	.995	.996
26	.412	.930	.939	.952	.959	.967	.977	.984	.989	.992	.993	.994	.995	.996
27	.407	.932	.941	.953	.960	.968	.977	.984	.989	.992	.994	.995	.995	.996
28	.402	.934	.943	.955	.962	.969	.978	.985	.990	.992	.994	.995	.995	.996
29	.397	.937	.945	.956	.962	.969	.979	.985	.990	.992	.994	.995	.995	.996
30	.392	.938	.947	.957	.964	.970	.979	.986	.990	.993	.994	.995	.996	.996
31	.388	.939	.948	.958	.965	.971	.980	.986	.990	.993	.994	.995	.996	.996
32	.383	.939	.949	.959	.966	.972	.980	.986	.990	.993	.994	.995	.996	.996
33	.379	.940	.950	.960	.967	.973	.981	.987	.991	.993	.994	.995	.996	.996
34	.375	.941	.951	.960	.967	.973	.981	.987	.991	.993	.994	.995	.996	.996
35	.371	.943	.952	.961	.968	.974	.982	.987	.991	.993	.995	.995	.996	.997
36	.367	.945	.953	.962	.968	.974	.982	.987	.991	.994	.995	.996	.996	.997
37	.364	.947	.955	.962	.969	.975	.982	.988	.991	.994	.995	.996	.996	.997
38	.360	.948	.956	.964	.970	.975	.983	.988	.992	.994	.995	.996	.996	.997
39	.357	.949	.957	.965	.971	.976	.983	.988	.992	.994	.995	.996	.996	.997
40	.354	.949	.958	.966	.972	.977	.983	.988	.992	.994	.995	.996	.996	.997
41	.351	.950	.958	.967	.972	.977	.984	.989	.992	.994	.995	.996	.996	.997
42	.348	.951	.959	.967	.973	.978	.984	.989	.992	.994	.995	.996	.997	.997
43	.345	.953	.959	.967	.973	.978	.984	.989	.992	.994	.995	.996	.997	.997
44	.342	.954	.960	.968	.973	.978	.984	.989	.992	.994	.995	.996	.997	.997
45	.339	.955	.961	.969	.974	.978	.985	.989	.993	.994	.995	.996	.997	.997
46	.336	.956	.962	.969	.974	.979	.985	.990	.993	.995	.995	.996	.997	.997
47	.334	.956	.963	.970	.974	.979	.985	.990	.993	.995	.995	.996	.997	.997
48	.331	.957	.963	.970	.975	.980	.985	.990	.993	.995	.996	.996	.997	.997
49	.329	.957	.964	.971	.975	.980	.986	.990	.993	.995	.996	.996	.997	.997
50	.326	.959	.965	.972	.977	.981	.986	.990	.993	.995	.996	.996	.997	.997
55	.315	.962	.967	.974	.978	.982	.987	.991	.994	.995	.996	.997	.997	.997
60	.305	.965	.970	.976	.980	.983	.988	.991	.994	.995	.996	.997	.997	.998
65	.296	.967	.972	.977	.981	.984	.989	.992	.994	.996	.996	.997	.997	.998
70	.288	.969	.974	.978	.982	.985	.989	.993	.995	.996	.997	.997	.998	.998
75	.281	.971	.975	.979	.983	.986	.990	.993	.995	.996	.997	.997	.998	.998
80	.274	.973	.976	.980	.984	.987	.991	.993	.995	.996	.997	.997	.998	.998
85	.268	.974	.977	.981	.985	.987	.991	.994	.995	.997	.997	.997	.998	.998
90	.263	.976	.978	.982	.985	.988	.991	.994	.996	.997	.997	.998	.998	.998
95	.257	.977	.979	.983	.986	.989	.992	.994	.996	.997	.997	.998	.998	.998
100	.252	.979	.981	.984	.987	.989	.992	.994	.996	.997	.998	.998	.998	.998

ตารางที่ 5 แสดงค่าเฉลี่ยและความแปรปรวนของค่าสถิติ T_1' และ T_2'

โดยเทคนิคมอนติคาร์โลซึ่งเลขสุ่มภายใต้ 2000 ตัวอย่าง เมื่อประชากรมีการแจกแจงแบบปกติสามารถประมาณค่าเฉลี่ยและความแปรปรวนของค่าสถิติได้ดังนี้

ขนาดตัวอย่าง	ตัวสถิติ T_1'		ตัวสถิติ T_2'	
	ค่าเฉลี่ย	ความแปรปรวน	ค่าเฉลี่ย	ความแปรปรวน
5	- 0.00212	0.10602	0.60804	0.42171
6	- 0.01494	0.06778	0.28739	0.20254
7	- 0.00983	0.05096	0.11681	0.12639
8	- 0.00809	0.03899	0.01465	0.08995
9	- 0.01093	0.03110	- 0.04011	0.07094
10	- 0.00727	0.02617	- 0.08202	0.05732
20	- 0.00275	0.00894	- 0.17047	0.01598
30	- 0.00095	0.00540	- 0.18197	0.00910
40	- 0.00156	0.00391	- 0.18780	0.00613
50	- 0.00142	0.00303	- 0.18891	0.00461

ตารางที่ 6

TABLE FOR TESTING SKEWNESS

(One-tailed percentage points of the distribution of $\sqrt{b_1} = g_1 = m_3/m_2^{3/2}$)*

Size of Sample n	Percentage Points 5%	Percentage Points 1%	Standard Deviation	Size of Sample n	Percentage Points 5%	Percentage Points 1%	Standard Deviation
25	0.711	1.061	0.4354	100	0.389	0.567	0.2377
30	0.662	0.986	.4052	125	0.350	0.508	.2139
35	0.621	0.923	.3804	150	0.321	0.464	.1961
40	0.587	0.870	.3596	175	0.298	0.430	.1820
45	0.558	0.825	.3418	200	0.280	0.403	.1706
50	0.534	0.787	.3264				
				250	0.251	0.360	.1531
60	0.492	0.723	.3009	300	0.230	0.329	.1400
70	0.459	0.673	.2806	350	0.213	0.305	.1298
80	0.432	0.631	.2638	400	0.200	0.285	.1216
90	0.409	0.596	.2498	450	0.188	0.269	.1147
100	0.389	0.567	.2377	500	0.179	0.255	.1089

* Since the distribution of $\sqrt{b_1}$ is symmetrical about zero, the percentage points represent 10% and 2% two-tailed values. Reproduced from Table 34 B of *Tables for Statisticians and Biometricians*, Vol. 1, by permission of Dr. E. S. Pearson and the *Biometrika* Trustees.

ตารางที่ 7

TABLE FOR TESTING KURTOSIS

(Percentage points of the distribution of $b_2 = m_4/m_2^2$)*

Size of Sample n	Percentage Points Upper 1%	Upper 5%	Lower 5%	Lower 1%	Size of Sample n	Percentage Points Upper 1%	Upper 5%	Lower 5%	Lower 1%
50	4.88	3.99	2.15	1.95	600	3.54	3.34	2.70	2.60
75	4.59	3.87	2.27	2.08	650	3.52	3.33	2.71	2.61
100	4.39	3.77	2.35	2.18	700	3.50	3.31	2.72	2.62
125	4.24	3.71	2.40	2.24	750	3.48	3.30	2.73	2.64
150	4.13	3.65	2.45	2.29	800	3.46	3.29	2.74	2.65
					850	3.45	3.28	2.74	2.66
200	3.98	3.57	2.51	2.37	900	3.43	3.28	2.75	2.66
250	3.87	3.52	2.55	2.42	950	3.42	3.27	2.76	2.67
300	3.79	3.47	2.59	2.46	1000	3.41	3.26	2.76	2.68
350	3.72	3.44	2.62	2.50					
400	3.67	3.41	2.64	2.52	1200	3.37	3.24	2.78	2.71
450	3.63	3.39	2.66	2.55	1400	3.34	3.22	2.80	2.72
500	3.60	3.37	2.67	2.57	1600	3.32	3.21	2.81	2.74
550	3.57	3.35	2.69	2.58	1800	3.30	3.20	2.82	2.76
600	3.54	3.34	2.70	2.60	2000	3.28	3.18	2.83	2.77

* Reproduced from Table 34 C of *Tables for Statisticians and Biometricians*, by permission of Dr. E. S. Pearson and the *Biometrika* Trustees.

ตารางที่ 8 แสดงจำนวนขั้นของการทดสอบไคสแควร์ เมื่อมีการแจกแจงปกติ

$$\text{ช่วงกว้างของแต่ละขั้น} = \frac{x_{(n)} - x_{(1)}}{k}$$

เมื่อ k = จำนวนขั้นที่ต้องการ

$x_{(i)}$ = order sample

โดยการทดสอบ 50 รอบ

ขนาดตัวอย่าง	k	จำนวนขั้นที่เหลือเมื่อทำการยุบ	หมายเหตุ
50	8	3 , 4, 6, 7, 8	การทดสอบ χ^2
	10	6, 7, 8	จึงเลือกใช้ k = 10
	12	6, 7, 8	
100	8	5, 6, 7, 8	การทดสอบ χ^2
	10	7, 8, 9, 10	จึงเลือกใช้ k = 12
	12	8, 9, 10, 12	
	15	9, 10, 11	

ตารางที่ 9 Lambda parameters for given values of skewness (α_3) and kurtosis (α_4) when $\mu = 0$ and $\sigma = 1$

$\alpha_3 = 0.0$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
1.8	.0	.5774	1.0000	1.0000
2.0	.0	.4952	.5843	.5843
2.2	.0	.4197	.4092	.4092
2.4	.0	.3533	.3032	.3032
2.6	.0	.2949	.2303	.2303
2.8	.0	.2433	.1765	.1765
3.0	.0	.1978	.1349	.1349
3.2	.0	.1563	.1016	.1016
3.4	.0	.1191	.0742	.0742
3.6	.0	.0852	.0512	.0512
3.8	.0	.0545	.0317	.0317
4.0	.0	.0262	.0148	.0148
4.1	.0	.0128	.7140•	.7140•
4.2	.0	-.0659•	-.0363•	-.0363•
4.3	.0	-.0123	-.6706•	-.6706•
4.4	.0	-.0241	-.0130	-.0130
4.6	.0	-.0466	-.0246	-.0246
4.8	.0	-.0676	-.0350	-.0350
5.0	.0	-.0870	-.0443	-.0443
5.2	.0	-.1053	-.0528	-.0528
5.4	.0	-.1227	-.0606	-.0606
5.6	.0	-.1389	-.0677	-.0677
5.8	.0	-.1541	-.0742	-.0742
6.0	.0	-.1686	-.0802	-.0802
6.2	.0	-.1823	-.0858	-.0858
6.4	.0	-.1956	-.0910	-.0910
6.6	.0	-.2077	-.0958	-.0958
6.8	.0	-.2198	-.1003	-.1003
7.0	.0	-.2306	-.1045	-.1045
7.2	.0	-.2410	-.1085	-.1085
7.4	.0	-.2518	-.1123	-.1123
7.6	.0	-.2615	-.1158	-.1158
7.8	.0	-.2709	-.1191	-.1191
8.0	.0	-.2800	-.1223	-.1223
8.2	.0	-.2887	-.1253	-.1253
8.4	.0	-.2969	-.1281	-.1281
8.6	.0	-.3050	-.1308	-.1308
8.8	.0	-.3128	-.1334	-.1334
9.0	.0	-.3203	-.1359	-.1359

$\alpha_3 = 0.05$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
1.3	-1.703	.2861	.0000	.9502•
2.0	-1.229	.3122	.0505	.7603
2.2	-.802	.3314	.1128	.5802
2.4	-.375	.3328	.1876	.3941
2.6	-.143	.2924	.1973	.2605
2.8	-.083	.2429	.1625	.1903
3.0	-.059	.1975	.1276	.1425
3.2	-.046	.1565	.0974	.1061
3.4	-.038	.1194	.0718	.0770
3.6	-.033	.0856	.0499	.0530
3.8	-.027	.0548	.0311	.0327
4.0	-.026	.0264	.0146	.0153
4.1	-.024	.0132	.7184•	.7504•
4.2	-.024	.0704•	.0380•	.0397•
4.3	-.022	-.0120	-.6386•	-.6643•
4.4	-.022	-.0238	-.0126	-.0131
4.6	-.018	-.0462	-.0240	-.0248
4.8	-.019	-.0671	-.0342	-.0354
5.0	-.016	-.0867	-.0435	-.0448
5.2	-.016	-.1050	-.0519	-.0534
5.4	-.015	-.1222	-.0596	-.0612
5.6	-.014	-.1386	-.0667	-.0685
5.8	-.014	-.1538	-.0731	-.0750
6.0	-.013	-.1682	-.0791	-.0810
6.2	-.012	-.1820	-.0847	-.0866
6.4	-.012	-.1950	-.0899	-.0918
6.6	-.012	-.2074	-.0947	-.0967
6.8	-.011	-.2192	-.0992	-.1012
7.0	-.011	-.2303	-.1034	-.1054
7.2	-.010	-.2411	-.1074	-.1094
7.4	-.010	-.2515	-.1112	-.1132
7.6	-.975•	-.2613	-.1147	-.1167
7.8	-.999•	-.2707	-.1180	-.1201
8.0	-.928•	-.2797	-.1212	-.1232
8.2	-.906•	-.2884	-.1242	-.1262
8.4	-.931•	-.2968	-.1270	-.1291
8.6	-.912•	-.3048	-.1297	-.1318
8.8	-.852•	-.3125	-.1323	-.1343
9.0	-.837•	-.3201	-.1348	-.1368

$\alpha_3 = 0.10$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
1.8	-1.678	.2835	.0000•	.9071•
2.0	-1.271	.3028	.0412	.7373
2.2	-.872	.3177	.0941	.5700
2.4	-.515	.3164	.1477	.4116
2.6	-.269	.2863	.1678	.2831
2.8	-.164	.2417	.1486	.2033
3.0	-.117	.1977	.1205	.1503
3.2	-.092	.1572	.0936	.1111
3.4	-.076	.1203	.0698	.0803
3.6	-.065	.0866	.0490	.0552
3.8	-.057	.0558	.0308	.0342
4.0	-.049	.0276	.0149	.0163
4.1	-.048	.0142	.7606•	.8302•
4.2	-.046	.1440•	.0762•	.0828•
4.3	-.044	-.0109	-.5703•	-.6178•
4.4	-.041	-.0227	-.0118	-.0127
4.6	-.037	-.0452	-.0231	-.0247
4.8	-.036	-.0661	-.0332	-.0356
5.0	-.033	-.0857	-.0424	-.0450
5.2	-.032	-.1040	-.0507	-.0537
5.4	-.030	-.1213	-.0584	-.0616
5.6	-.028	-.1375	-.0654	-.0688
5.8	-.027	-.1530	-.0719	-.0755
6.0	-.027	-.1674	-.0778	-.0816
6.2	-.025	-.1811	-.0834	-.0872
6.4	-.024	-.1943	-.0886	-.0925
6.6	-.023	-.2066	-.0934	-.0973
6.8	-.023	-.2184	-.0979	-.1019
7.0	-.022	-.2297	-.1021	-.1062
7.2	-.021	-.2405	-.1061	-.1102
7.4	-.020	-.2507	-.1099	-.1139
7.6	-.020	-.2606	-.1134	-.1175
7.8	-.020	-.2699	-.1167	-.1208
8.0	-.019	-.2791	-.1199	-.1240
8.2	-.019	-.2878	-.1229	-.1270
8.4	-.018	-.2961	-.1258	-.1298
8.6	-.017	-.3041	-.1285	-.1325
8.8	-.017	-.3119	-.1311	-.1351
9.0	-.017	-.3193	-.1335	-.1376

$\alpha_3 = 0.15$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
1.8	-1.655	.2811	.0000•	.8700•
2.0	-1.323	.2934	.0314	.7209
2.2	-.940	.3056	.0782	.5623
2.4	-.617	.3031	.1215	.4198
2.6	-.376	.2791	.1435	.2994
2.8	-.244	.2397	.1350	.2156
3.0	-.177	.1980	.1135	.1586
3.2	-.138	.1584	.0901	.1167
3.4	-.114	.1219	.0682	.0843
3.6	-.098	.0894	.0485	.0581
3.8	-.086	.0577	.0310	.0363
4.0	-.076	.0294	.0155	.0178
4.1	-.072	.0160	.8378•	.9564•
4.2	-.069	.3217•	.1667•	.1890•
4.3	-.066	-.9113•	-.4660•	-.5278•
4.4	-.063	-.0210	-.0107	-.0120
4.6	-.058	-.0435	-.0218	-.0242
4.8	-.055	-.0644	-.0318	-.0351
5.0	-.051	-.0842	-.0410	-.0449
5.2	-.048	-.1025	-.0493	-.0537
5.4	-.045	-.1193	-.0569	-.0617
5.6	-.043	-.1361	-.0639	-.0690
5.8	-.042	-.1514	-.0703	-.0757
6.0	-.040	-.1660	-.0763	-.0819
6.2	-.038	-.1798	-.0819	-.0876
6.4	-.037	-.1928	-.0870	-.0929
6.6	-.035	-.2053	-.0919	-.0978
6.8	-.034	-.2172	-.0964	-.1024
7.0	-.033	-.2284	-.1006	-.1067
7.2	-.032	-.2392	-.1046	-.1107
7.4	-.031	-.2496	-.1084	-.1145
7.6	-.030	-.2593	-.1119	-.1180
7.8	-.029	-.2688	-.1153	-.1214
8.0	-.028	-.2780	-.1185	-.1246
8.2	-.028	-.2866	-.1215	-.1276
8.4	-.027	-.2948	-.1243	-.1304
8.6	-.027	-.3031	-.1271	-.1332
8.8	-.026	-.3108	-.1297	-.1357
9.0	-.025	-.3183	-.1322	-.1382

$\alpha_3 = 0.20$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.0	-1.387	.2841	.0212	.7090
2.2	-1.011	.2947	.0638	.5571
2.4	-.706	.2919	.1013	.4246
2.6	-.471	.2718	.1233	.3120
2.8	-.322	.2374	.1221	.2273
3.0	-.237	.1983	.1065	.1672
3.2	-.187	.1599	.0866	.1230
3.4	-.159	.1240	.0667	.0889
3.6	-.132	.0908	.0482	.0615
3.8	-.116	.0601	.0314	.0389
4.0	-.103	.0318	.0164	.0198
4.1	-.097	.0185	.9467•	.0113
4.2	-.093	.5707•	.2894•	.3429•
4.3	-.089	-.6691•	-.3342•	-.3929•
4.4	-.085	-.0185	-.9261•	-.0108
4.6	-.079	-.0410	-.0202	-.0233
4.8	-.074	-.0622	-.0302	-.0345
5.0	-.069	-.0818	-.0392	-.0444
5.2	-.065	-.1003	-.0475	-.0538
5.4	-.061	-.1176	-.0551	-.0615
5.6	-.058	-.1339	-.0621	-.0689
5.8	-.055	-.1494	-.0686	-.0757
6.0	-.053	-.1639	-.0745	-.0819
6.2	-.051	-.1778	-.0801	-.0877
6.4	-.049	-.1909	-.0853	-.0930
6.6	-.047	-.2034	-.0901	-.0980
6.8	-.045	-.2153	-.0947	-.1026
7.0	-.044	-.2265	-.0989	-.1069
7.2	-.043	-.2374	-.1029	-.1110
7.4	-.041	-.2477	-.1067	-.1148
7.6	-.040	-.2577	-.1103	-.1184
7.8	-.039	-.2671	-.1136	-.1218
8.0	-.038	-.2762	-.1168	-.1250
8.2	-.037	-.2850	-.1199	-.1280
8.4	-.036	-.2935	-.1228	-.1309
8.6	-.035	-.3016	-.1255	-.1336
8.8	-.035	-.3092	-.1281	-.1362
9.0	-.034	-.3168	-.1306	-.1387
9.2	-.034	-.3241	-.1330	-.1411

$\alpha_3 = 0.25$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.0	-1.465	.2748	.0105	.7034
2.2	-1.084	.2847	.0506	.5548
2.4	-.790	.2820	.0943	.4294
2.6	-.558	.2650	.1062	.3226
2.8	-.398	.2349	.1059	.2385
3.0	-.298	.1987	.0996	.1763
3.2	-.237	.1619	.0831	.1300
3.4	-.196	.1266	.0653	.0962
3.6	-.167	.0937	.0481	.0656
3.8	-.147	.0632	.0321	.0421
4.0	-.131	.0351	.0176	.0224
4.1	-.126	.0217	.0108	.0136
4.2	-.118	.8889•	.4408•	.5467•
4.3	-.113	-.3476•	-.1713•	-.2103•
4.4	-.108	-.0154	-.7540•	-.9175•
4.6	-.099	-.0380	-.0184	-.0220
4.8	-.094	-.0591	-.0282	-.0338
5.0	-.087	-.0790	-.0373	-.0436
5.2	-.082	-.0974	-.0455	-.0527
5.4	-.077	-.1149	-.0531	-.0610
5.6	-.073	-.1312	-.0601	-.0685
5.8	-.070	-.1467	-.0665	-.0754
6.0	-.067	-.1613	-.0725	-.0817
6.2	-.064	-.1753	-.0781	-.0876
6.4	-.062	-.1885	-.0833	-.0930
6.6	-.059	-.2010	-.0882	-.0980
6.8	-.058	-.2129	-.0927	-.1027
7.0	-.055	-.2242	-.0970	-.1070
7.2	-.054	-.2350	-.1010	-.1111
7.4	-.052	-.2455	-.1048	-.1150
7.6	-.051	-.2554	-.1084	-.1186
7.8	-.049	-.2649	-.1118	-.1220
8.0	-.048	-.2742	-.1151	-.1252
8.2	-.047	-.2829	-.1181	-.1283
8.4	-.046	-.2914	-.1210	-.1312
8.6	-.044	-.2995	-.1238	-.1339
8.8	-.044	-.3072	-.1264	-.1365
9.0	-.043	-.3147	-.1289	-.1390
9.2	-.042	-.3220	-.1313	-.1414

The parameter values given in this table are for a variate with zero mean and unit variance. The procedure for adjusting the parameters to reflect a different mean or variance is given in Section 3. A plus sign (+) next to a tabled value indicates that the value has two leading zeroes and should be multiplied by 10^{-2}. Similarly, a dollar sign ($) next to a tabled value indicates that the value should be multiplied by 10^{-4}. An asterisk (*) next to a tabled value of λ_j indicates that the difference between the calculated and specified values of α_j, i.e. $|\alpha_j(\lambda_3,\lambda_4) - \alpha_j|$, is somewhat greater than 0.01. See Section 4 for a discussion of the construction and accuracy of this table.

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$\alpha_3 = 0.30$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.0	-1.550	.2660	.0000	.7020
2.2	-1.164	.2755	.0380	.5556
2.4	-.871	.2733	.0695	.4348
2.6	-.642	.2586	.0911	.3324
2.8	-.474	.2323	.0983	.2495
3.0	-.362	.1991	.0925	.1859
3.2	-.288	.1641	.0796	.1377
3.4	-.239	.1298	.0640	.1003
3.6	-.204	.0973	.0481	.0704
3.8	-.179	.0671	.0330	.0460
4.0	-.160	.0389	.0190	.0255
4.2	-.144	.0127	.6175+	.8035+
4.3	-.138	.0789+	.0380+	.0489+
4.4	-.131	-.0116	-.5554+	-.7057+
4.5	-.129	-.0231	-.0110	-.0139
4.6	-.121	-.0343	-.0163	-.0203
4.8	-.113	-.0554	-.0260	-.0319
5.0	-.105	-.0752	-.0350	-.0423
5.2	-.100	-.0939	-.0432	-.0517
5.4	-.094	-.1114	-.0508	-.0601
5.6	-.089	-.1279	-.0578	-.0678
5.8	-.085	-.1435	-.0643	-.0748
6.0	-.081	-.1582	-.0703	-.0812
6.2	-.078	-.1722	-.0759	-.0872
6.4	-.075	-.1854	-.0811	-.0927
6.6	-.072	-.1979	-.0860	-.0977
6.8	-.069	-.2100	-.0906	-.1025
7.0	-.067	-.2214	-.0949	-.1069
7.2	-.065	-.2325	-.0990	-.1111
7.4	-.063	-.2427	-.1028	-.1149
7.6	-.061	-.2528	-.1064	-.1186
7.8	-.060	-.2623	-.1098	-.1220
8.0	-.058	-.2716	-.1131	-.1253
8.2	-.056	-.2805	-.1162	-.1284
8.4	-.055	-.2889	-.1191	-.1313
8.6	-.054	-.2971	-.1219	-.1341
8.8	-.053	-.3050	-.1246	-.1367
9.0	-.052	-.3125	-.1271	-.1392
9.2	-.051	-.3197	-.1295	-.1416

$\alpha_3 = 0.35$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.0	-1.539	.2639	.0000*	.6836*
2.2	-1.252	.2668	.0256	.5599
2.4	-.955	.2653	.0559	.4415
2.6	-.724	.2528	.0775	.3423
2.8	-.550	.2298	.0873	.2606
3.0	-.427	.1996	.0854	.1961
3.2	-.343	.1665	.0758	.1462
3.4	-.285	.1333	.0625	.1072
3.6	-.243	.1014	.0482	.0760
3.8	-.213	.0714	.0340	.0505
4.0	-.191	.0434	.0206	.0293
4.2	-.172	.0173	.8158*	.0112
4.3	-.163	.4870*	.2293*	.3090*
4.4	-.156	-.7105*	-.3332*	-.4431*
4.5	-.151	-.0187	-.8723*	-.0115
4.6	-.142	-.0298	-.0139	-.0180
4.8	-.132	-.0511	-.0236	-.0300
5.0	-.124	-.0710	-.0325	-.0407
5.2	-.117	-.0899	-.0407	-.0503
5.4	-.110	-.1078	-.0483	-.0589
5.6	-.105	-.1249	-.0553	-.0668
5.8	-.100	-.1396	-.0618	-.0739
6.0	-.096	-.1545	-.0678	-.0805
6.2	-.091	-.1685	-.0735	-.0865
6.4	-.088	-.1818	-.0787	-.0921
6.6	-.085	-.1945	-.0836	-.0973
6.8	-.082	-.2067	-.0883	-.1021
7.0	-.079	-.2181	-.0926	-.1066
7.2	-.077	-.2291	-.0967	-.1108
7.4	-.074	-.2396	-.1006	-.1147
7.6	-.072	-.2496	-.1042	-.1184
7.8	-.070	-.2593	-.1077	-.1219
8.0	-.068	-.2685	-.1109	-.1252
8.2	-.066	-.2775	-.1141	-.1283
8.4	-.065	-.2860	-.1170	-.1313
8.6	-.064	-.2942	-.1198	-.1341
8.8	-.062	-.3020	-.1225	-.1367
9.0	-.060	-.3096	-.1251	-.1392
9.2	-.059	-.3172	-.1276	-.1417

$\alpha_3 = 0.40$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.2	-1.354	.2582	.0129	.5683
2.4	-1.043	.2580	.0430	.4500
2.6	-.808	.2473	.0648	.3527
2.8	-.627	.2273	.0767	.2720
3.0	-.494	.2000	.0782	.2069
3.2	-.400	.1690	.0718	.1555
3.4	-.333	.1371	.0609	.1149
3.6	-.284	.1060	.0482	.0824
3.8	-.248	.0764	.0351	.0558
4.0	-.222	.0485	.0223	.0337
4.2	-.200	.0228	.0103	.0189
4.3	-.190	.0100	.4597*	.6521*
4.4	-.182	-.0397*	-.0182*	-.0258**
4.5	-.174	-.0136	-.6204*	-.8533*
4.6	-.166	-.0248	-.0113	-.0153
4.8	-.155	-.0462	-.0209	-.0277
5.0	-.146	-.0662	-.0297	-.0387
5.2	-.136	-.0850	-.0379	-.0485
5.4	-.129	-.1027	-.0455	-.0574
5.6	-.122	-.1194	-.0525	-.0654
5.8	-.115	-.1352	-.0591	-.0727
6.0	-.111	-.1501	-.0651	-.0794
6.2	-.106	-.1643	-.0708	-.0856
6.4	-.102	-.1778	-.0761	-.0913
6.6	-.098	-.1906	-.0811	-.0966
6.8	-.094	-.2026	-.0857	-.1014
7.0	-.091	-.2142	-.0901	-.1060
7.2	-.089	-.2253	-.0942	-.1103
7.4	-.086	-.2359	-.0981	-.1143
7.6	-.083	-.2459	-.1018	-.1180
7.8	-.081	-.2558	-.1053	-.1216
8.0	-.079	-.2650	-.1086	-.1249
8.2	-.077	-.2741	-.1118	-.1281
8.4	-.075	-.2827	-.1148	-.1311
8.6	-.073	-.2908	-.1176	-.1339
8.8	-.072	-.2988	-.1203	-.1366
9.0	-.070	-.3064	-.1229	-.1391
9.2	-.069	-.3139	-.1254	-.1416
9.4	-.067	-.3210	-.1278	-.1439

$\alpha_3 = 0.45$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.2	-1.471	.2500	.0000	.5812
2.4	-1.138	.2511	.0305	.4608
2.6	-.894	.2424	.0528	.3641
2.8	-.707	.2248	.0663	.2840
3.0	-.565	.2003	.0707	.2184
3.2	-.460	.1716	.0674	.1657
3.4	-.384	.1412	.0590	.1236
3.6	-.329	.1110	.0480	.0897
3.8	-.287	.0818	.0361	.0619
4.0	-.255	.0542	.0241	.0388
4.2	-.230	.0282	.0126	.0193
4.3	-.221	.0158	.7045*	.0106
4.4	-.208	.4102*	.1833*	.2691*
4.5	-.200	-.7861*	-.3505*	-.5065*
4.6	-.192	-.0191	-.8511*	-.0121
4.8	-.178	-.0406	-.0180	-.0249
5.0	-.165	-.0607	-.0268	-.0362
5.2	-.157	-.0796	-.0349	-.0464
5.4	-.147	-.0975	-.0425	-.0555
5.6	-.140	-.1142	-.0495	-.0637
5.8	-.132	-.1302	-.0561	-.0712
6.0	-.127	-.1453	-.0622	-.0781
6.2	-.121	-.1595	-.0679	-.0844
6.4	-.116	-.1731	-.0733	-.0902
6.6	-.112	-.1860	-.0783	-.0956
6.8	-.108	-.1983	-.0830	-.1006
7.0	-.104	-.2098	-.0874	-.1052
7.2	-.101	-.2211	-.0916	-.1096
7.4	-.097	-.2316	-.0955	-.1136
7.6	-.095	-.2419	-.0992	-.1175
7.8	-.092	-.2518	-.1028	-.1211
8.0	-.090	-.2611	-.1061	-.1245
8.2	-.088	-.2702	-.1093	-.1277
8.4	-.085	-.2789	-.1124	-.1307
8.6	-.084	-.2871	-.1152	-.1336
8.8	-.081	-.2952	-.1180	-.1363
9.0	-.080	-.3029	-.1206	-.1389
9.2	-.078	-.3102	-.1231	-.1413
9.4	-.076	-.3176	-.1256	-.1437

$\alpha_3 = 0.50$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.4	-1.245	.2445	.0178	.4748
2.6	-.987	.2376	.0410	.3770
2.8	-.790	.2225	.0561	.2969
3.0	-.639	.2006	.0630	.2307
3.2	-.525	.1742	.0625	.1768
3.4	-.440	.1454	.0566	.1332
3.6	-.376	.1163	.0476	.0979
3.8	-.329	.0877	.0369	.0689
4.0	-.290	.0604	.0259	.0447
4.2	-.262	.0345	.0149	.0243
4.3	-.248	.0221	.9582*	.0152
4.4	-.238	.0101	.4383*	.6815*
4.5	-.228	-.1612*	-.0700*	-.1066*
4.6	-.219	-.0128	-.5570*	-.8334*
4.8	-.202	-.0344	-.0149	-.0216
5.0	-.188	-.0546	-.0236	-.0333
5.2	-.177	-.0737	-.0317	-.0438
5.4	-.167	-.0917	-.0393	-.0532
5.6	-.157	-.1087	-.0464	-.0617
5.8	-.150	-.1246	-.0529	-.0694
6.0	-.142	-.1398	-.0591	-.0764
6.2	-.137	-.1542	-.0648	-.0829
6.4	-.131	-.1679	-.0702	-.0889
6.6	-.126	-.1809	-.0753	-.0944
6.8	-.122	-.1933	-.0800	-.0995
7.0	-.117	-.2050	-.0845	-.1042
7.2	-.114	-.2163	-.0887	-.1087
7.4	-.110	-.2270	-.0927	-.1128
7.6	-.107	-.2374	-.0965	-.1167
7.8	-.104	-.2473	-.1001	-.1204
8.0	-.101	-.2567	-.1035	-.1238
8.2	-.098	-.2659	-.1067	-.1271
8.4	-.095	-.2745	-.1098	-.1301
8.6	-.094	-.2830	-.1127	-.1331
8.8	-.091	-.2910	-.1155	-.1358
9.0	-.089	-.2986	-.1181	-.1384
9.2	-.088	-.3064	-.1207	-.1410
9.4	-.086	-.3134	-.1231	-.1433
9.6	-.084	-.3206	-.1255	-.1456

$\alpha_3 = 0.55$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.4	-1.370	.2379	.4463*	.4931
2.6	-1.097	.2331	.0292	.3920
2.8	-.878	.2202	.0459	.3109
3.0	-.716	.2009	.0551	.2440
3.2	-.593	.1767	.0572	.1889
3.4	-.499	.1497	.0538	.1438
3.6	-.428	.1217	.0467	.1070
3.8	-.372	.0940	.0376	.0767
4.0	-.330	.0670	.0275	.0514
4.2	-.298	.0413	.0172	.0301
4.4	-.265	.0170	.7149*	.0118
4.5	-.257	.5355*	.2258*	.3644*
4.6	-.247	-.5954*	-.2515*	-.3975*
4.7	-.237	-.0169	-.7160*	-.0111
4.8	-.227	-.0276	-.0117	-.0178
5.0	-.213	-.0480	-.0203	-.0300
5.2	-.200	-.0671	-.0283	-.0408
5.4	-.187	-.0852	-.0359	-.0505
5.6	-.177	-.1024	-.0430	-.0593
5.8	-.165	-.1184	-.0495	-.0672
6.0	-.161	-.1338	-.0557	-.0745
6.2	-.153	-.1483	-.0615	-.0811
6.4	-.147	-.1620	-.0669	-.0872
6.6	-.141	-.1753	-.0721	-.0929
6.8	-.136	-.1878	-.0769	-.0981
7.0	-.131	-.1997	-.0814	-.1030
7.2	-.127	-.2111	-.0857	-.1075
7.4	-.123	-.2218	-.0897	-.1117
7.6	-.119	-.2322	-.0935	-.1157
7.8	-.115	-.2422	-.0972	-.1194
8.0	-.113	-.2519	-.1006	-.1230
8.2	-.110	-.2610	-.1039	-.1263
8.4	-.107	-.2698	-.1070	-.1294
8.6	-.104	-.2784	-.1100	-.1324
8.8	-.102	-.2864	-.1128	-.1352
9.0	-.100	-.2943	-.1155	-.1379
9.2	-.097	-.3019	-.1181	-.1404
9.4	-.095	-.3092	-.1206	-.1428
9.6	-.094	-.3164	-.1230	-.1452

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$\alpha_3 = 0.60$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.4	-1.411	.2347	.0000*	.4951*
2.6	-1.198	.2286	.0171	.4098
2.8	-.972	.2180	.0355	.3265
3.0	-.800	.2009	.0467	.2583
3.2	-.665	.1791	.0514	.2020
3.4	-.562	.1539	.0504	.1554
3.6	-.482	.1273	.0454	.1171
3.8	-.420	.1005	.0379	.0854
4.0	-.372	.0740	.0289	.0589
4.2	-.335	.0486	.0194	.0366
4.4	-.302	.0244	.9911*	.0175
4.5	-.289	.0128	.5215*	.8965*
4.6	-.277	.1492*	.0611*	.1025*
4.7	-.266	-.9531*	-.3916*	-.6425*
4.8	-.256	-.0202	-.8326*	-.0134
5.0	-.238	-.0407	-.0168	-.0261
5.2	-.222	-.0600	-.0248	-.0373
5.4	-.209	-.0782	-.0323	-.0474
5.6	-.197	-.0956	-.0394	-.0565
5.8	-.187	-.1118	-.0460	-.0647
6.0	-.179	-.1273	-.0522	-.0722
6.2	-.171	-.1419	-.0580	-.0790
6.4	-.163	-.1559	-.0635	-.0853
6.6	-.157	-.1691	-.0686	-.0911
6.8	-.151	-.1818	-.0735	-.0965
7.0	-.146	-.1938	-.0781	-.1015
7.2	-.141	-.2052	-.0824	-.1061
7.4	-.137	-.2163	-.0865	-.1105
7.6	-.132	-.2267	-.0904	-.1145
7.6	-.128	-.2368	-.0941	-.1183
8.0	-.124	-.2465	-.0976	-.1219
8.2	-.121	-.2557	-.1009	-.1253
8.4	-.118	-.2647	-.1041	-.1285
8.6	-.115	-.2732	-.1071	-.1315
8.8	-.113	-.2815	-.1100	-.1344
9.0	-.110	-.2894	-.1127	-.1371
9.2	-.108	-.2970	-.1153	-.1397
9.4	-.105	-.3045	-.1179	-.1422
9.6	-.103	-.3116	-.1203	-.1445

$\alpha_3 = 0.65$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.6	-1.329	.2240	.3908*	.4318
2.8	-1.076	.2157	.0246	.3443
3.0	-.889	.2010	.0380	.2742
3.2	-.744	.1812	.0449	.2162
3.4	-.630	.1582	.0464	.1682
3.6	-.542	.1330	.0435	.1283
3.8	-.472	.1072	.0377	.0952
4.0	-.416	.0813	.0300	.0674
4.2	-.374	.0564	.0215	.0440
4.4	-.338	.0323	.0126	.0239
4.5	-.324	.0207	.8137*	.0150
4.6	-.310	.9399*	.3719*	.6660*
4.7	-.297	-.1593*	-.0634*	-.1106*
4.8	-.285	-.0123	-.8921*	-.8391*
5.0	-.265	-.0328	-.0132	-.0216
5.2	-.248	-.0524	-.0211	-.0334
5.4	-.231	-.0707	-.0286	-.0438
5.6	-.219	-.0880	-.0356	-.0532
5.8	-.209	-.1046	-.0422	-.0618
6.0	-.198	-.1201	-.0484	-.0695
6.2	-.189	-.1350	-.0543	-.0766
6.4	-.181	-.1491	-.0598	-.0831
6.6	-.174	-.1625	-.0650	-.0891
6.8	-.167	-.1753	-.0700	-.0946
7.0	-.161	-.1874	-.0746	-.0997
7.2	-.155	-.1991	-.0790	-.1045
7.4	-.150	-.2100	-.0831	-.1089
7.6	-.145	-.2208	-.0871	-.1131
7.8	-.141	-.2309	-.0908	-.1170
8.0	-.137	-.2407	-.0944	-.1207
8.2	-.134	-.2501	-.0977	-.1242
8.4	-.130	-.2591	-.1010	-.1274
8.6	-.127	-.2677	-.1040	-.1305
8.8	-.124	-.2761	-.1069	-.1335
9.0	-.121	-.2840	-.1097	-.1362
9.2	-.119	-.2919	-.1124	-.1389
9.4	-.116	-.2994	-.1150	-.1414
9.6	-.114	-.3065	-.1174	-.1438
9.8	-.112	-.3136	-.1198	-.1461

$\alpha_3 = 0.70$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.6	-1.368	.2217	.0000*	.4353*
2.8	-1.194	.2132	.0130	.3651
3.0	-.987	.2008	.0286	.2918
3.2	-.828	.1833	.0378	.2319
3.4	-.709	.1621	.0416	.1821
3.6	-.606	.1385	.0409	.1406
3.8	-.529	.1139	.0369	.1060
4.0	-.467	.0889	.0307	.0768
4.2	-.419	.0643	.0232	.0522
4.4	-.379	.0406	.0151	.0312
4.6	-.344	.0178	.6767*	.0130
4.7	-.331	.6799*	.2607*	.4872*
4.8	-.317	-.3917*	-.1512*	-.2750*
4.9	-.305	-.0184	-.5574*	-.9893*
5.0	-.294	-.0245	-.9565*	-.0166
5.2	-.276	-.0441	-.0173	-.0289
5.4	-.257	-.0626	-.0247	-.0398
5.6	-.243	-.0802	-.0317	-.0496
5.8	-.229	-.0967	-.0383	-.0586
6.0	-.215	-.1125	-.0445	-.0665
6.2	-.209	-.1275	-.0504	-.0738
6.4	-.199	-.1417	-.0560	-.0805
6.6	-.191	-.1554	-.0613	-.0867
6.8	-.184	-.1682	-.0662	-.0924
7.0	-.177	-.1805	-.0709	-.0977
7.2	-.170	-.1923	-.0754	-.1026
7.4	-.165	-.2036	-.0796	-.1072
7.6	-.160	-.2144	-.0836	-.1115
7.8	-.155	-.2246	-.0874	-.1155
8.0	-.151	-.2346	-.0910	-.1193
8.2	-.147	-.2439	-.0944	-.1228
8.4	-.143	-.2532	-.0977	-.1262
8.6	-.139	-.2618	-.1008	-.1293
8.8	-.136	-.2703	-.1038	-.1323
9.0	-.133	-.2784	-.1066	-.1352
9.2	-.130	-.2862	-.1093	-.1379
9.4	-.127	-.2937	-.1119	-.1404
9.6	-.125	-.3011	-.1144	-.1429
9.8	-.122	-.3081	-.1168	-.1452

$\alpha_3 = 0.75$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
2.8	-1.334	.2104	.0000	.3903
3.0	-1.097	.2003	.0183	.3119
3.2	-.921	.1850	.0299	.2492
3.4	-.785	.1658	.0360	.1974
3.6	-.677	.1440	.0375	.1542
3.8	-.590	.1206	.0355	.1179
4.0	-.521	.0966	.0309	.0873
4.2	-.466	.0726	.0246	.0614
4.4	-.419	.0492	.0174	.0392
4.6	-.384	.0266	.9663*	.0202
4.7	-.367	.0156	.5749*	.0116
4.8	-.352	.8940*	.1333*	.3583*
4.9	-.339	-.5509*	-.2061*	-.3916*
5.0	-.328	-.0157	-.5915*	-.0109
5.2	-.306	-.0353	-.0138	-.0238
5.4	-.288	-.0539	-.0207	-.0352
5.6	-.268	-.0716	-.0276	-.0454
5.6	-.254	-.0884	-.0342	-.0547
6.0	-.240	-.1044	-.0405	-.0630
6.2	-.229	-.1195	-.0464	-.0706
6.4	-.219	-.1339	-.0520	-.0776
6.6	-.209	-.1476	-.0573	-.0840
6.8	-.201	-.1607	-.0623	-.0899
7.0	-.194	-.1731	-.0670	-.0954
7.2	-.188	-.1851	-.0715	-.1005
7.4	-.181	-.1964	-.0758	-.1052
7.6	-.175	-.2072	-.0799	-.1096
7.8	-.170	-.2177	-.0837	-.1137
6.0	-.165	-.2278	-.0874	-.1176
8.2	-.160	-.2375	-.0909	-.1213
8.4	-.156	-.2466	-.0942	-.1247
8.6	-.152	-.2554	-.0974	-.1279
8.8	-.148	-.2640	-.1004	-.1310
9.0	-.145	-.2722	-.1033	-.1339
9.2	-.142	-.2802	-.1061	-.1367
9.4	-.138	-.2879	-.1088	-.1393
9.6	-.135	-.2952	-.1113	-.1418
9.8	-.133	-.3023	-.1137	-.1442
10.0	-.130	-.3093	-.1161	-.1465

$\alpha_3 = 0.80$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
3.0	-1.225	.1996	.6847*	.3356
3.2	-1.025	.1864	.0211	.2687
3.4	-.874	.1692	.0295	.2143
3.6	-.758	.1492	.0333	.1691
3.8	-.657	.1272	.0333	.1310
4.0	-.582	.1042	.0303	.0989
4.2	-.515	.0810	.0254	.0716
4.4	-.468	.0580	.0192	.0482
4.6	-.425	.0357	.0123	.0281
4.8	-.392	.0142	.5035*	.0107
4.9	-.375	.3770*	.1352*	.2770*
5.0	-.361	-.6291*	-.2278*	-.4531*
5.1	-.349	-.0164	-.5981*	-.0116
5.2	-.335	-.0261	-.9598*	-.0181
5.4	-.313	-.0449	-.0167	-.0301
5.6	-.295	-.0626	-.0235	-.0408
5.8	-.279	-.0795	-.0300	-.0504
6.0	-.264	-.0958	-.0363	-.0592
6.2	-.251	-.1110	-.0422	-.0671
6.4	-.240	-.1255	-.0478	-.0743
6.6	-.230	-.1394	-.0531	-.0810
6.8	-.220	-.1527	-.0582	-.0871
7.0	-.212	-.1653	-.0630	-.0928
7.2	-.204	-.1774	-.0676	-.0980
7.4	-.197	-.1889	-.0719	-.1029
7.6	-.191	-.2000	-.0760	-.1075
7.8	-.185	-.2106	-.0799	-.1117
8.0	-.180	-.2205	-.0836	-.1157
8.2	-.174	-.2304	-.0872	-.1195
8.4	-.169	-.2397	-.0906	-.1230
8.6	-.166	-.2488	-.0938	-.1264
8.8	-.161	-.2574	-.0969	-.1295
9.0	-.157	-.2658	-.0999	-.1325
9.2	-.154	-.2737	-.1027	-.1353
9.4	-.150	-.2815	-.1054	-.1380
9.6	-.147	-.2890	-.1080	-.1406
9.8	-.144	-.2962	-.1105	-.1430
10.0	-.141	-.3033	-.1129	-.1454
10.2	-.139	-.3100	-.1152	-.1476

$\alpha_3 = 0.85$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
3.0	-1.303	.1985	.0000*	.3488
3.2	-1.145	.1875	.0110	.2912
3.4	-.973	.1723	.0220	.2332
3.6	-.838	.1581	.0281	.1855
3.8	-.732	.1336	.0301	.1455
4.0	-.645	.1119	.0291	.1117
4.2	-.577	.0895	.0256	.0829
4.4	-.515	.0671	.0206	.0582
4.6	-.472	.0451	.0146	.0370
4.8	-.430	.0238	.8001*	.0185
4.9	-.413	.0134	.4581*	.0102
5.0	-.398	.3503*	.1211*	.2612*
5.1	-.383	-.6701*	-.2365*	-.4896*
5.2	-.370	-.0165	-.5808*	-.0118
5.4	-.348	-.0353	-.0127	-.0244
5.6	-.328	-.0531	-.0193	-.0356
5.8	-.305	-.0703	-.0258	-.0457
6.0	-.290	-.0864	-.0319	-.0548
6.2	-.275	-.1019	-.0378	-.0631
6.4	-.262	-.1168	-.0435	-.0707
6.6	-.251	-.1307	-.0488	-.0776
6.8	-.241	-.1442	-.0539	-.0840
7.0	-.231	-.1570	-.0588	-.0899
7.2	-.223	-.1692	-.0634	-.0953
7.4	-.215	-.1809	-.0678	-.1004
7.6	-.207	-.1921	-.0720	-.1051
7.8	-.201	-.2028	-.0759	-.1095
8.0	-.195	-.2130	-.0797	-.1136
8.2	-.190	-.2229	-.0833	-.1175
8.4	-.184	-.2324	-.0868	-.1211
8.6	-.179	-.2416	-.0901	-.1246
8.8	-.175	-.2503	-.0932	-.1278
9.0	-.171	-.2587	-.0962	-.1309
9.2	-.167	-.2669	-.0991	-.1338
9.4	-.163	-.2748	-.1019	-.1366
9.6	-.159	-.2823	-.1045	-.1392
9.8	-.156	-.2897	-.1071	-.1417
10.0	-.153	-.2967	-.1095	-.1441
10.2	-.150	-.3037	-.1119	-.1464

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$\alpha_3 = 0.90$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
3.2	-1.277	.1880	.0000	.3160
3.4	-1.085	.1751	.0133	.2588
3.6	-.933	.1586	.0218	.2039
3.8	-.814	.1397	.0260	.1615
4.0	-.717	.1193	.0269	.1258
4.2	-.635	.0979	.0251	.0953
4.4	-.575	.0762	.0214	.0693
4.6	-.522	.0547	.0164	.0468
4.8	-.478	.0337	.0106	.0273
5.0	-.439	.0132	.4328*	.0102
5.1	-.422	.3339*	.1111*	.2526*
5.2	-.407	-.6388*	-.2154*	-.4735*
5.3	-.394	-.0159	-.5428*	-.0116
5.4	-.375	-.0252	-.8694*	-.0180
5.6	-.353	-.0432	-.0152	-.0298*
5.8	-.330	-.0605	-.0215	-.0405
6.0	-.317	-.0768	-.0275	-.0500
6.2	-.301	-.0924	-.0334	-.0587
6.4	-.287	-.1073	-.0390	-.0666
6.6	-.273	-.1215	-.0444	-.0738
6.8	-.262	-.1352	-.0495	-.0805
7.0	-.252	-.1481	-.0544	-.0866
7.2	-.242	-.1606	-.0591	-.0923
7.4	-.233	-.1723	-.0635	-.0975
7.6	-.225	-.1838	-.0678	-.1024
7.8	-.218	-.1947	-.0718	-.1070
8.0	-.212	-.2051	-.0756	-.1113
8.2	-.205	-.2151	-.0793	-.1153
8.4	-.199	-.2246	-.0828	-.1190
8.6	-.194	-.2340	-.0862	-.1226
8.8	-.189	-.2428	-.0894	-.1259
9.0	-.185	-.2514	-.0928	-.1291
9.2	-.180	-.2597	-.0954	-.1321
9.4	-.176	-.2676	-.0982	-.1349
9.6	-.172	-.2753	-.1009	-.1376
9.8	-.168	-.2827	-.1035	-.1402
10.0	-.165	-.2900	-.1060	-.1427
10.2	-.162	-.2969	-.1084	-.1450
10.4	-.159	-.3035	-.1107	-.1472

$\alpha_3 = 1.00$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
3.4	-1.253	.1772	.0000*	.2854*
3.6	-1.169	.1664	.4828*	.2490
3.8	-1.010	.1509	.0141	.1996
4.0	-.886	.1333	.0193	.1588
4.2	-.787	.1142	.0212	.1244
4.4	-.706	.0943	.0206	.0950
4.6	-.638	.0741	.0182	.0697
4.8	-.581	.0539	.0144	.0477
5.0	-.533	.0340	.9695*	.0285
5.2	-.492	.0146	.4383*	.0117
5.3	-.474	.5192*	.1584*	.4061*
5.4	-.445	-.0317*	-.0101**	-.0242**
5.5	-.442	-.0132	-.4176*	-.9946*
5.6	-.429	-.0222	-.7097*	-.0168
5.8	-.403	-.0395	-.0129	-.0282*
6.0	-.379	-.0562	-.0187	-.0388
6.2	-.358	-.0721	-.0244	-.0484
6.4	-.341	-.0873	-.0299	-.0571
6.6	-.325	-.1019	-.0352	-.0651
6.8	-.309	-.1158	-.0404	-.0723
7.0	-.297	-.1291	-.0453	-.0790
7.2	-.285	-.1419	-.0500	-.0852
7.4	-.275	-.1540	-.0545	-.0909
7.6	-.265	-.1658	-.0589	-.0962
7.8	-.256	-.1769	-.0630	-.1011
8.0	-.248	-.1878	-.0670	-.1058
8.2	-.241	-.1980	-.0707	-.1101
8.4	-.233	-.2079	-.0744	-.1141
8.6	-.227	-.2174	-.0778	-.1179
8.8	-.220	-.2267	-.0812	-.1215
9.0	-.215	-.2356	-.0844	-.1249
9.2	-.210	-.2440	-.0874	-.1281
9.4	-.204	-.2522	-.0904	-.1311
9.6	-.200	-.2602	-.0932	-.1340
9.8	-.195	-.2678	-.0959	-.1367
10.0	-.191	-.2752	-.0985	-.1393
10.2	-.187	-.2824	-.1010	-.1418
10.4	-.184	-.2893	-.1034	-.1442
10.6	-.180	-.2959	-.1057	-.1464

$\alpha_3 = 1.10$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
3.8	-1.215	.1582	.0000*	.2379
4.0	-1.108	.1459	.6035*	.2013
4.2	-.974	.1294	.0125	.1607
4.4	-.869	.1117	.0157	.1267
4.6	-.781	.0932	.0165	.0977
4.8	-.708	.0743	.0154	.0727
5.0	-.647	.0552	.0128	.0508
5.2	-.596	.0365	.9168*	.0318
5.4	-.552	.0181	.4839*	.0150
5.5	-.532	.9038*	.2484*	.7342*
5.6	-.517	.0997*	.0279*	.0795*
5.7	-.497	-.8629*	-.2479*	-.6726*
5.8	-.481	-.0173	-.5046*	-.0132
6.0	-.451	-.0340	-.0103	-.0451
6.2	-.427	-.0501	-.0155	-.0358
6.4	-.403	-.0656	-.0208	-.0455
6.6	-.384	-.0805	-.0259	-.0544
6.8	-.366	-.0947	-.0309	-.0624
7.0	-.350	-.1084	-.0358	-.0698
7.2	-.335	-.1214	-.0405	-.0766
7.4	-.322	-.1341	-.0451	-.0829
7.6	-.311	-.1460	-.0494	-.0887
7.8	-.299	-.1577	-.0537	-.0941
8.0	-.289	-.1687	-.0577	-.0991
8.2	-.280	-.1794	-.0616	-.1038
8.4	-.271	-.1896	-.0653	-.1082
8.6	-.263	-.1994	-.0689	-.1123
8.8	-.256	-.2090	-.0724	-.1162
9.0	-.249	-.2180	-.0757	-.1198
9.2	-.242	-.2267	-.0788	-.1232
9.4	-.236	-.2353	-.0819	-.1265
9.6	-.231	-.2435	-.0848	-.1296
9.8	-.226	-.2513	-.0876	-.1325
10.0	-.221	-.2590	-.0903	-.1353
10.2	-.216	-.2664	-.0930	-.1379
10.4	-.211	-.2735	-.0955	-.1404
10.6	-.207	-.2804	-.0979	-.1428
10.8	-.203	-.2870	-.1002	-.1451
11.0	-.199	-.2936	-.1025	-.1473

$\alpha_3 = 1.20$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
4.2	-1.183	.1407	.0000*	.1997
4.4	-1.083	.1278	.5096*	.1675
4.6	-.965	.1113	.9968*	.1329
4.8	-.870	.0941	.0122	.1036
5.0	-.792	.0764	.0124	.0784
5.2	-.723	.0586	.0112	.0565
5.4	-.668	.0408	.8705*	.0372
5.6	-.615	.0233	.5411*	.0202
5.7	-.597	.0146	.3525*	.0124
5.8	-.577	.6088*	.1515*	.5050*
5.9	-.558	-.2319*	-.0594*	-.1884*
6.0	-.562	-.0962*	-.0245*	-.0784*
6.2	-.508	-.0268	-.7343*	-.0206
6.4	-.481	-.0424	-.0120	-.0315
6.6	-.454	-.0575	-.0168	-.0414
6.8	-.432	-.0719	-.0215	-.0504
7.0	-.412	-.0860	-.0262	-.0587
7.2	-.394	-.0993	-.0308	-.0662
7.4	-.376	-.1123	-.0353	-.0732
7.6	-.362	-.1247	-.0397	-.0796
7.8	-.349	-.1366	-.0439	-.0856
8.0	-.337	-.1480	-.0480	-.0911
8.2	-.325	-.1589	-.0519	-.0962
8.4	-.314	-.1695	-.0558	-.1010
8.6	-.305	-.1796	-.0594	-.1055
8.8	-.296	-.1836	-.0630	-.1098
9.0	-.287	-.1990	-.0664	-.1137
9.2	-.280	-.2082	-.0697	-.1175
9.4	-.271	-.2168	-.0728	-.1210
9.6	-.265	-.2253	-.0759	-.1243
9.8	-.259	-.2335	-.0788	-.1275
10.0	-.254	-.2414	-.0816	-.1305
10.2	-.248	-.2490	-.0843	-.1333
10.4	-.242	-.2564	-.0870	-.1360
10.6	-.237	-.2636	-.0895	-.1386
10.8	-.233	-.2704	-.0919	-.1410
11.0	-.228	-.2772	-.0943	-.1434
11.2	-.224	-.2837	-.0966	-.1456
11.4	-.220	-.2901	-.0988	-.1478

$\alpha_3 = 1.30$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
4.6	-1.156	.1248	.0000*	.1679
4.8	-1.084	.1129	.3174*	.1435
5.0	-.975	.0968	.7225*	.1130
5.2	-.886	.0802	.9035*	.0870
5.4	-.812	.0634	.9148*	.0645
5.6	-.749	.0466	.7959*	.0447
5.8	-.695	.0300	.5783*	.0273
6.0	-.604	.0286*	.66195*	.0235*
6.1	-.617	.0446*	.0100*	.0375**
6.2	-.616	-.0526*	-.0118*	-.0442*
6.3	-.585	-.0104	-.2450*	-.8506*
6.4	-.572	-.0182	-.4399*	-.0146
6.6	-.535	-.0333	-.8469*	-.0258
6.8	-.510	-.0480	-.0127	-.0360
7.0	-.485	-.0622	-.0170	-.0453
7.2	-.463	-.0758	-.0213	-.0538
7.4	-.442	-.0890	-.0256	-.0616
7.6	-.424	-.1017	-.0298	-.0688
7.8	-.407	-.1140	-.0340	-.0754
8.0	-.392	-.1258	-.0380	-.0816
8.2	-.378	-.1372	-.0420	-.0873
8.4	-.365	-.1480	-.0458	-.0926
8.6	-.353	-.1584	-.0495	-.0975
8.8	-.342	-.1687	-.0531	-.1022
9.0	-.332	-.1784	-.0566	-.1065
9.2	-.322	-.1878	-.0600	-.1106
9.4	-.314	-.1969	-.0632	-.1145
9.6	-.305	-.2057	-.0664	-.1181
9.8	-.298	-.2141	-.0694	-.1215
10.0	-.291	-.2223	-.0723	-.1248
10.2	-.284	-.2304	-.0752	-.1279
10.4	-.277	-.2379	-.0779	-.1308
10.6	-.272	-.2453	-.0805	-.1336
10.8	-.266	-.2525	-.0831	-.1362
11.0	-.261	-.2595	-.0855	-.1388*
11.2	-.256	-.2662	-.0879	-.1412
11.4	-.251	-.2728	-.0902	-.1435
11.6	-.246	-.2792	-.0925	-.1457
11.8	-.242	-.2852	-.0946	-.1478

$\alpha_3 = 1.40$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
5.0	-1.132	.1092	.0000*	.1411
5.2	-1.006	.1011	.0787*	.1268
5.4	-1.001	.0855	.4546*	.0991
5.6	-.916	.0697	.6256*	.0754
5.8	-.844	.0538	.6530*	.0547
6.0	-.782	.0379	.5603*	.0365
6.2	-.729	.0222	.3785*	.0204
6.3	-.706	.0145	.2611*	.0130
6.4	-.683	.6822*	.1292*	.5987*
6.5	-.660	-.1226*	-.0244*	-.1052*
6.6	-.643	-.8266*	-.1702*	-.6968*
6.8	-.607	-.0230	-.5060*	-.0187
7.0	-.575	-.0373	-.8670*	-.0293
7.2	-.547	-.0510	-.0124	-.0389
7.4	-.521	-.0645	-.0163	-.0478
7.6	-.498	-.0775	-.0202	-.0559
7.8	-.475	-.0900	-.0242	-.0633*
8.0	-.458	-.1020	-.0280	-.0702
8.2	-.440	-.1137	-.0319	-.0766
8.4	-.423	-.1250	-.0357	-.0825*
8.6	-.410	-.1358	-.0393	-.0881*
8.8	-.395	-.1463	-.0430	-.0932
9.0	-.383	-.1564	-.0465	-.0980
9.2	-.372	-.1662	-.0499	-.1026
9.4	-.361	-.1756	-.0532	-.1068
9.6	-.351	-.1846	-.0564	-.1108
9.8	-.342	-.1935	-.0595	-.1146
10.0	-.333	-.2018	-.0625	-.1181
10.2	-.325	-.2102	-.0655	-.1215
10.4	-.317	-.2181	-.0683	-.1247
10.6	-.310	-.2257	-.0710	-.1277
10.8	-.303	-.2332	-.0737	-.1306
11.0	-.297	-.2405	-.0762	-.1334*
11.2	-.291	-.2475	-.0787	-.1360
11.4	-.285	-.2542	-.0811	-.1385*
11.6	-.279	-.2609	-.0835	-.1409
11.8	-.274	-.2671	-.0857	-.1431
12.0	-.269	-.2734	-.0879	-.1453
12.2	-.265	-.2794	-.0900	-.1474

ตารางที่ 9 (ต่อ)

$\alpha_3 = 1.50$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
5.4	-1.112	.0951	.0000*	.1182
5.6	-1.103	.0686	.0000*	.1083
5.8	-1.042	.0773	.1949*	.0899
6.0	-.957	.0622	.2907*	.0677
6.2	-.885	.0471	.3441*	.0483
6.4	-.824	.0321	.3885*	.0313
6.6	-.688	.0566*	.0104**	.0494**
6.7	-.747	.9962*	.1538*	.9059*
6.8	-.719	-.0290*	-.4897$	-.0256*
6.9	-.704	-.4446*	-.0768*	-.3882*
7.0	-.684	-.0115	-.2088*	-.9875*
7.2	-.647	-.0254	-.4989*	-.0210
7.4	-.615	-.0390	-.8156*	-.0312
7.6	-.585	-.0520	-.0115	-.0404
7.8	-.558	-.0648	-.0150	-.0489
8.0	-.536	-.0767	-.0184	-.0565
8.2	-.514	-.0891	-.0221	-.0640
8.4	-.494	-.1007	-.0257	-.0707
8.6	-.476	-.1119	-.0292	-.0769
8.8	-.459	-.1225	-.0327	-.0826
9.0	-.443	-.1330	-.0362	-.0880
9.2	-.429	-.1431	-.0396	-.0931
9.4	-.416	-.1528	-.0429	-.0978
9.6	-.404	-.1622	-.0461	-.1022
9.8	-.392	-.1713	-.0493	-.1064
10.0	-.382	-.1803	-.0524	-.1104
10.2	-.372	-.1887	-.0553	-.1141
10.4	-.363	-.1969	-.0582	-.1176
10.6	-.354	-.2049	-.0611	-.1209
10.8	-.346	-.2127	-.0638	-.1241
11.0	-.338	-.2202	-.0665	-.1271
11.2	-.331	-.2273	-.0690	-.1299
11.4	-.325	-.2339	-.0713	-.1325
11.6	-.317	-.2414	-.0740	-.1353
11.8	-.311	-.2478	-.0763	-.1377
12.0	-.305	-.2544	-.0786	-.1401
12.2	-.300	-.2607	-.0808	-.1424
12.4	-.295	-.2662	-.0827	-.1444
12.6	-.289	-.2726	-.0851	-.1466

$\alpha_3 = 1.60$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
6.0	-1.086	.0757	.0000*	.0896
6.2	-1.078	.0698	.0000	.0814
6.4	-1.011	.0573	.1699*	.0634
6.6	-.937	.0430	.2684*	.0449
6.8	-.875	.0287	.2597*	.0285
7.0	-.746	.0422*	.6356$*	.0378**
7.1	-.796	.77738*	.0969*	.7177*
7.2	-.771	-.0341*	-.4634$	-.0309*
7.3	-.751	-.5924*	-.0858*	-.5279*
7.4	-.731	-.0127	-.1942*	-.0111
7.6	-.693	-.0258	-.3383*	-.0218
7.8	-.659	-.0386	-.7111*	-.0316
8.0	-.630	-.0511	-.0100	-.0406
8.2	-.602	-.0633	-.0131	-.0489
8.4	-.577	-.0752	-.0163	-.0566*
8.6	-.553	-.0866	-.0196	-.0636
8.8	-.534	-.0972	-.0227	-.0699
9.0	-.515	-.1084	-.0261	-.0763
9.2	-.496	-.1187	-.0294	-.0819
9.4	-.480	-.1288	-.0326	-.0872
9.6	-.465	-.1385	-.0358	-.0922
9.8	-.452	-.1480	-.0389	-.0969
10.0	-.438	-.1572	-.0420	-.1013
10.2	-.426	-.1659	-.0450	-.1054
10.4	-.415	-.1745	-.0479	-.1093
10.6	-.404	-.1828	-.0508	-.1130
10.8	-.394	-.1908	-.0536	-.1165
11.0	-.385	-.1986	-.0563	-.1198
11.2	-.377	-.2062	-.0589	-.1230
11.4	-.368	-.2135	-.0615	-.1260
11.6	-.360	-.2206	-.0640	-.1288
11.8	-.352	-.2275	-.0665	-.1315
12.0	-.346	-.2341	-.0688	-.1341
12.2	-.339	-.2407	-.0711	-.1366
12.4	-.333	-.2471	-.0734	-.1390
12.6	-.328	-.2527	-.0753	-.1411
12.8	-.321	-.2592	-.0777	-.1434
13.0	-.316	-.2650	-.0797	-.1455
13.2	-.311	-.2706	-.0817	-.1475

$\alpha_3 = 1.70$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
6.6	-1.068	.0580	.0000*	.0657
6.8	-1.057	.0525	.0000	.0588
7.0	-1.001	.0412	.1027*	.0441
7.2	-.935	.0275	.1513*	.0280
7.4	-.878	.0142	.1962*	.0138
7.5	-.852	.7546*	.0696*	.7179*
7.6	-.825	-.0250*	-.2601$	-.0232**
7.7	-.806	-.5469*	-.0619*	-.5000*
7.8	-.788	-.0119	-.1463*	-.0107
8.0	-.745	-.0245	-.3323*	-.0212
8.2	-.709	-.0367	-.5205*	-.0308
8.4	-.678	-.0487	-.9215*	-.0397
8.6	-.650	-.0603	-.0109	-.0478
8.8	-.622	-.0717	-.0139	-.0553*
9.0	-.598	-.0827	-.0167	-.0623
9.2	-.578	-.0933	-.0196	-.0688
9.4	-.557	-.1036	-.0226	-.0748
9.6	-.538	-.1136	-.0256	-.0804
9.8	-.521	-.1233	-.0286	-.0857
10.0	-.505	-.1329	-.0316	-.0907
10.2	-.485	-.1420	-.0346	-.0953
10.4	-.476	-.1509	-.0375	-.0997
10.6	-.463	-.1594	-.0403	-.1038
10.8	-.451	-.1677	-.0431	-.1077
11.0	-.440	-.1758	-.0458	-.1114
11.2	-.429	-.1837	-.0485	-.1149
11.4	-.419	-.1913	-.0511	-.1182
11.6	-.410	-.1988	-.0537	-.1214
11.8	-.401	-.2059	-.0562	-.1244
12.0	-.392	-.2128	-.0586	-.1272
12.2	-.384	-.2195	-.0610	-.1299
12.4	-.377	-.2261	-.0633	-.1325
12.6	-.369	-.2326	-.0656	-.1350
12.8	-.362	-.2388	-.0678	-.1374
13.0	-.356	-.2450	-.0700	-.1397
13.2	-.350	-.2508	-.0720	-.1419
13.4	-.344	-.2565	-.0741	-.1440
13.6	-.338	-.2622	-.0761	-.1460
13.8	-.333	-.2675	-.0780	-.1479*

$\alpha_3 = 1.80$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
7.2	-1.045	.0417	.0000*	.0456
7.4	-1.039	.0367	.0000*	.0396
7.6	-1.007	.0284	.0378*	.0298
7.8	-.945	.0155	.0646*	.0155
7.9	-.918	.9177*	.0498*	.9006*
8.0	-.892	.2914*	.0193*	.2801*
8.1	-.868	-.3291*	-.0258*	-.3102*
8.2	-.846	-.9427*	-.0826*	-.8721*
8.4	-.804	-.0215	-.2289*	-.0192
8.6	-.767	-.0333	-.4103*	-.0288
8.8	-.733	-.0448	-.6190*	-.0376
9.0	-.702	-.0559	-.8489*	-.0456
9.2	-.675	-.0668	-.0109	-.0531
9.4	-.649	-.0774	-.0135	-.0601
9.6	-.625	-.0877	-.0162	-.0665
9.8	-.604	-.0978	-.0189	-.0726
10.0	-.583	-.1075	-.0217	-.0782
10.2	-.565	-.1169	-.0244	-.0835
10.4	-.548	-.1260	-.0272	-.0884
10.6	-.532	-.1349	-.0299	-.0931
10.8	-.517	-.1436	-.0327	-.0975
11.0	-.503	-.1520	-.0354	-.1016
11.2	-.490	-.1600	-.0380	-.1055
11.4	-.478	-.1679	-.0406	-.1092
11.6	-.467	-.1757	-.0432	-.1128
11.8	-.456	-.1831	-.0457	-.1161
12.0	-.445	-.1904	-.0482	-.1193
12.2	-.436	-.1974	-.0506	-.1223
12.4	-.427	-.2043	-.0530	-.1252
12.6	-.418	-.2109	-.0553	-.1279
12.8	-.410	-.2175	-.0576	-.1306
13.0	-.402	-.2238	-.0598	-.1331
13.2	-.395	-.2299	-.0619	-.1355
13.4	-.388	-.2359	-.0640	-.1378
13.6	-.381	-.2417	-.0661	-.1400
13.8	-.374	-.2473	-.0681	-.1421
14.0	-.368	-.2530	-.0701	-.1442
14.2	-.362	-.2583	-.0720	-.1461
14.4	-.357	-.2632	-.0737	-.1479

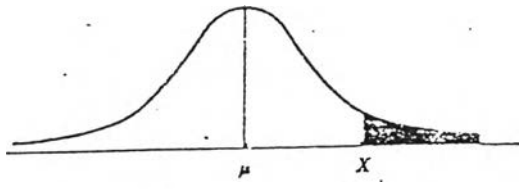
$\alpha_3 = 1.90$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
8.0	-1.023	.0220	.0000*	.0230
8.2	-1.018	.0175	.0000	.0181
8.4	-.968	.6947*	.0150*	.6431*
8.5	-.946	.1239*	.4120$	.1215*
8.6	-.917	-.5494*	-.0257*	-.5220*
8.7	-.893	-.0113	-.0657*	-.0106
8.8	-.871	-.0171	-.1167*	-.0158
9.0	-.831	-.0284	-.2475*	-.0254
9.2	-.794	-.0395	-.4100*	-.0343
9.4	-.761	-.0503	-.5975*	-.0424
9.6	-.731	-.0609	-.8046*	-.0500
9.8	-.703	-.0712	-.0103	-.0570
10.0	-.679	-.0811	-.0126	-.0635
10.2	-.656	-.0907	-.0150	-.0695
10.4	-.634	-.1002	-.0175	-.0752
10.6	-.614	-.1093	-.0200	-.0805
10.8	-.595	-.1183	-.0226	-.0855
11.0	-.578	-.1269	-.0251	-.0902
11.2	-.562	-.1355	-.0277	-.0947
11.4	-.547	-.1437	-.0302	-.0989
11.6	-.533	-.1515	-.0327	-.1028
11.8	-.520	-.1590	-.0352	-.1066
12.0	-.508	-.1665	-.0375	-.1100
12.2	-.495	-.1742	-.0401	-.1135
12.4	-.485	-.1811	-.0423	-.1166
12.6	-.474	-.1883	-.0448	-.1198
12.8	-.464	-.1950	-.0471	-.1227
13.0	-.455	-.2015	-.0493	-.1255
13.2	-.446	-.2080	-.0515	-.1282*
13.4	-.437	-.2142	-.0537	-.1307
13.6	-.429	-.2203	-.0558	-.1332
13.8	-.421	-.2262	-.0579	-.1355
14.0	-.414	-.2320	-.0599	-.1378
14.2	-.407	-.2376	-.0619	-.1399
14.4	-.400	-.2431	-.0638	-.1420
14.6	-.394	-.2485	-.0657	-.1440
14.8	-.388	-.2537	-.0676	-.1459
15.0	-.382	-.2589	-.0694	-.1478
15.2	-.376	-.2616	-.0711	-.1495

$\alpha_3 = 2.00$

α_4	LAM 1	LAM 2	LAM 3	LAM 4
8.6	-1.009	.8397*	.0000*	.8541*
8.8	-1.000	.4187*	.0000*	.4182*
8.9	-1.002	.2061*	.0001$*	.2070*
9.0	-.993	-.1081*	-.0407$	-.1076*
9.1	-.978	-.5675*	-.7075$	-.5567*
9.2	-.950	-.0113	-.0272*	-.0109
9.4	-.905	-.0222	-.1012*	-.0207
9.6	-.865	-.0331	-.2125*	-.0298
9.8	-.828	-.0435	-.3537*	-.0381
10.0	-.796	-.0538	-.5187*	-.0458
10.2	-.766	-.0637	-.7027*	-.0529
10.4	-.738	-.0734	-.9016*	-.0595
10.6	-.713	-.0829	-.0111	-.0657
10.8	-.690	-.0920	-.0133	-.0714
11.0	-.670	-.1005	-.0154	-.0766
11.2	-.647	-.1097	-.0179	-.0819
11.4	-.629	-.1181	-.0202	-.0867
11.6	-.611	-.1260	-.0226	-.0912
11.8	-.595	-.1345	-.0249	-.0955
12.0	-.579	-.1423	-.0273	-.0995
12.2	-.565	-.1499	-.0296	-.1033
12.4	-.557	-.1555	-.0312	-.1062
12.6	-.539	-.1644	-.0342	-.1104
12.8	-.527	-.1715	-.0365	-.1137
13.0	-.515	-.1784	-.0388	-.1168
13.2	-.504	-.1851	-.0410	-.1198
13.4	-.495	-.1914	-.0431	-.1226
13.6	-.485	-.1979	-.0452	-.1254
13.8	-.475	-.2041	-.0474	-.1280
14.0	-.466	-.2101	-.0495	-.1305
14.2	-.458	-.2160	-.0515	-.1329
14.4	-.450	-.2216	-.0535	-.1351*
14.6	-.443	-.2271	-.0554	-.1373
14.8	-.436	-.2321	-.0571	-.1393
15.0	-.428	-.2380	-.0592	-.1415
15.2	-.422	-.2432	-.0610	-.1435*
15.4	-.415	-.2481	-.0628	-.1453*
15.6	-.409	-.2532	-.0646	-.1472
15.8	-.403	-.2580	-.0663	-.1489*

ตารางที่ 10 Area Under the Normal Curve



Example

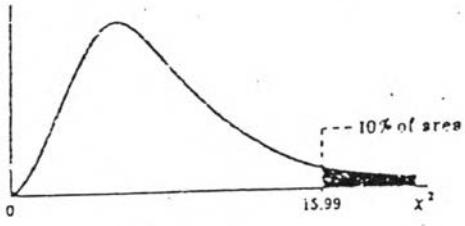
$$z = \frac{X - \mu}{\sigma}$$

$P[z > 1] = .1587$

$P[z > 1.96] = .0250$

Normal Deviate z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641
0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010

ตารางที่ 11 Cercentage Points of the χ^2 Disttubution.



Example

For ϕ = 10 degrees of freedom:

$P[\chi^2 > 15.99] = .10$

ϕ \ P	.995	.99	.975	.95	.90	.75	.50	.25	.10	.05	.025	.01	.005	ϕ
1	0.0⁴393	0.0³157	0.0³982	0.0²393	0.0158	0.102	0.455	1.323	2.71	3.84	5.02	6.63	7.88	1
2	0.0100	0.0201	0.0506	0.103	0.211	0.575	1.386	2.77	4.61	5.99	7.38	9.21	10.60	2
3	0.0717	0.115	0.216	0.352	0.584	1.213	2.37	4.11	6.25	7.81	9.35	11.34	12.84	3
4	0.207	0.297	0.484	0.711	1.064	1.923	3.36	5.39	7.78	9.49	11.14	13.28	14.86	4
5	0.412	0.554	0.831	1.145	1.610	2.67	4.35	6.63	9.24	11.07	12.83	15.09	16.75	5
6	0.676	0.872	1.237	1.635	2.20	3.45	5.35	7.84	10.64	12.59	14.45	16.81	18.55	6
7	0.989	1.239	1.690	2.17	2.83	4.25	6.35	9.04	12.02	14.07	16.01	18.48	20.3	7
8	1.344	1.646	2.18	2.73	3.49	5.07	7.34	10.22	13.36	15.51	17.53	20.1	22.0	8
9	1.735	2.09	2.70	3.33	4.17	5.90	8.34	11.39	14.68	16.92	19.02	21.7	23.6	9
10	2.16	2.56	3.25	3.94	4.87	6.74	9.34	12.55	15.99	18.31	20.5	23.2	25.2	10
11	2.60	3.05	3.82	4.57	5.58	7.58	10.34	13.70	17.28	19.68	21.9	24.7	26.8	11
12	3.07	3.57	4.40	5.23	6.30	8.44	11.34	14.85	18.55	21.0	23.3	26.2	28.3	12
13	3.57	4.11	5.01	5.89	7.04	9.30	12.34	15.98	19.81	22.4	24.7	27.7	29.8	13
14	4.07	4.66	5.63	6.57	7.79	10.17	13.34	17.12	21.1	23.7	26.1	29.1	31.3	14
15	4.60	5.23	6.26	7.26	8.55	11.04	14.34	18.25	22.3	25.0	27.5	30.6	32.8	15
16	5.14	5.81	6.91	7.96	9.31	11.91	15.34	19.37	23.5	26.3	28.8	32.0	34.3	16
17	5.70	6.41	7.56	8.67	10.09	12.79	16.34	20.5	24.8	27.6	30.2	33.4	35.7	17
18	6.26	7.01	8.23	9.39	10.86	13.68	17.34	21.6	26.0	28.9	31.5	34.8	37.2	18
19	6.84	7.63	8.91	10.12	11.65	14.56	18.34	22.7	27.2	30.1	32.9	36.2	38.6	19
20	7.43	8.26	9.59	10.85	12.44	15.45	19.34	23.8	28.4	31.4	34.2	37.6	40.0	20
21	8.03	8.90	10.28	11.59	13.24	16.34	20.3	24.9	29.6	32.7	35.5	38.9	41.4	21
22	8.64	9.54	10.98	12.34	14.04	17.24	21.3	26.0	30.8	33.9	36.8	40.3	42.8	22
23	9.26	10.20	11.69	13.09	14.85	18.14	22.3	27.1	32.0	35.2	38.1	41.6	44.2	23
24	9.89	10.86	12.40	13.85	15.66	19.04	23.3	28.2	33.2	36.4	39.4	43.0	45.6	24
25	10.52	11.52	13.12	14.61	16.47	19.94	24.3	29.3	34.4	37.7	40.6	44.3	46.9	25
26	11.16	12.20	13.84	15.38	17.29	20.8	25.3	30.4	35.6	38.9	41.9	45.6	48.3	26
27	11.81	12.88	14.57	16.15	18.11	21.7	26.3	31.5	36.7	40.1	43.2	47.0	49.6	27
28	12.46	13.56	15.31	16.93	18.94	22.7	27.3	32.6	37.9	41.3	44.5	48.3	51.0	28
29	13.12	14.26	16.05	17.71	19.77	23.6	28.3	33.7	39.1	42.6	45.7	49.6	52.3	29
30	13.79	14.95	16.79	18.49	20.6	24.5	29.3	34.8	40.3	43.8	47.0	50.9	53.7	30
40	20.7	22.2	24.4	26.5	29.1	33.7	39.3	45.6	51.8	55.8	59.3	63.7	66.8	40
50	28.0	29.7	32.4	34.8	37.7	42.9	49.3	56.3	63.2	67.5	71.4	76.2	79.5	50
60	35.5	37.5	40.5	43.2	46.5	52.3	59.3	67.0	74.4	79.1	83.3	88.4	92.0	60
70	43.3	45.4	48.8	51.7	55.3	61.7	69.3	77.6	85.5	90.5	95.0	100.4	104.2	70
80	51.2	53.5	57.2	60.4	64.3	71.1	79.3	88.1	96.6	101.9	106.6	112.3	116.3	80
90	59.2	61.8	65.6	69.1	73.3	80.6	89.3	98.6	107.6	113.1	118.1	124.1	128.3	90
100	67.3	70.1	74.2	77.9	82.4	90.1	99.3	109.1	118.5	124.3	129.6	135.8	140.2	100
z_α	−2.58	−2.33	−1.96	−1.64	−1.28	−0.674	0.000	0.674	1.282	1.645	1.960	2.33	2.58	z_α

For $\phi > 100$ take $\chi^2 = \frac{1}{2}(z_\alpha + \sqrt{2\phi - 1})^2$. z_α is the standardized normal deviate corresponding to the α level of significance, and is shown in the bottom of the table.

ประวัติผู้เขียน

นางสาวสมพิศ โชติวิทยธารากร เกิดวันที่ 18 กุมภาพันธ์ พ.ศ. 2506 จังหวัดนครราชสีมา ได้รับปริญญาวิทยาศาสตรบัณฑิต สาขาคณิตศาสตร์ จากมหาวิทยาลัยศรีนครินทรวิโรฒ ประสานมิตร ปีการศึกษา 2526 และเข้าศึกษาต่อในสาขาสถิติ ภาควิชาสถิติ บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย เมื่อปีการศึกษา 2527