

```

PROGRAM
COMMAND *****
1  ?-----
1  ? Programm zur Zusatzaufgabe auf Uebungsblatt 3
1  ?-----
1  options crt;
2
2  ?Daten einlesen und ueberpruefen
2  freq n;
3  read(file='ku2005_2006.xls');
4
4  ?smpl 1 10; ?erste 10 Beobachtungen aus 2005
4  ?print F1-F5 D2005 D2006;
4
4  ?smpl 234 243; ?erste 10 Beobachtungen aus 2006
4  ?print F1-F5 D2005 D2006;
4
4  ?smpl 1 483; ?gesamten Datensatz verwenden
4  ?msd(terse,byvar) F1-F32 D2005 D2006;
4
4  ?select D2005=1; ?Beobachtungen aus 2005 auswaehlen
4  ?msd(terse,byvar) F1-F32 D2005 D2006;
4
4  ?select D2006=1; ?Beobachtungen aus 2006 auswaehlen
4  ?msd(terse,byvar) F1-F32 D2005 D2006;
4
4  ?select 1; ?gesamten Datensatz verwenden (gemaess letztem smpl)
4
4  ?Aufgabe 3.1a
4  title 'Aufgabe 3.1a';
5  ?Datensatz für 2005 auswählen:
5  select D2005=1;
6  ?Kritische Werte für Aklpha = 0.05 (zweiseitig):
6  set zcrit975 = cnormi(0.975);
7  ?Statistiken ausgeben für dir Variable F18:
7  msd(terse,byvar) F18;
8  ?Teststatistik berechnen:
8  set tF18 = sqrt(@nobmsd)*@mean/@stddev;
9  ?Teststatisitk mit kritischem Wert vergleichen:
9  print tF18 zcrit975;
10 ?->nicht ablehnen
10
10 ?Aufgabe 3.1b
10 title 'Aufgabe 3.1b';
11 select D2005=1;
12 ?Kritische Werte für Aklpha = 0.05 (einseitig)
12 set ekrit95 = cnormi(0.95);
13 msd(terse,byvar) F16;
14 set tF16 = sqrt(@nobmsd)*@mean/@stddev;
15 print tF16 ekrit95;
16 ?->ablehnen
16
16 ?Aufgabe 3.1c
16 title 'Aufgabe 3.1c';
17 select D2005=1;
18 ?Verbundene Stichprobe also Differenz d_amp definieren:
18 d_amp = F28 - F20;
19 msd(terse,byvar) d_amp;
20 ?neuen Variablen die statistiken ausgeben:
20 set td_amp = sqrt(@nobmsd)*@mean/@stddev;
21 print td_amp zcrit975;
22 ?->nicht ablehnen
22

```

```

22 ?Aufgabe 3.1d
22 title 'Aufgabe 3.1d';
23 select D2005=1;
24 set mecrit95 = - cnormi(0.95);
25 d_wo = F5 - F6;
26 msd(terse) d_wo;
27 set td_wo = sqrt(@nobmsd)*@mean/@stddev;
28 print td_wo mecrit95;
29 ?->ablehnen
29
29
29 ?Aufgabe 3.1e
29 ?Dummyvariable: 0 (trifft nicht zu) oder 1 (trifft zu) anzeigt
29 select D2005=1;
30 genr FRAU=F31=1;
31 genr MANN=F31=2;
32
32 title 'Aufgabe 3.1e';
33 select FRAU=1;
34 set nfrau=@nob;
35 msd(terse) F1;
36 ?set nfrau = @nobmsd;
36 set mfrau = @mean;
37 set sdfrau = @stddev;
38
38 select MANN=1;
39 set nmann=@nob;
40 msd(terse) F1;
41 ?set nmann = @nobmsd;
41 set mmann = @mean;
42 set sdmann = @stddev;
43 set tfrau_mann = (mfrau-mmann)/(sqrt(sdfrau**2/nfrau +
sdmann**2/nmann));
44 print tfrau_mann zcrit975;
45 ?->ablehnen
45
45 ?Aufgabe 3b
45 title 'Aufgabe 3b';
46 ?H(0): E(F18)-E(F26)=0 / H(A): E(F18)-E(F26) .ne. 0 (Jahr 2005)
46 select D2005=1;
47 d_lo05_1 = F18-F26;
48 msd(terse,byvar) d_lo05_1;
49 set td_lo05_1 = sqrt(@nobmsd)*@mean/@stddev;
50
50 ?H(0): E(F18)-E(F26)=0 / H(A): E(F18)-E(F26) .ne. 0 (Jahr 2006)
50 select D2006=1;
51 d_lo06_1 = F18-F26;
52 msd(terse,byvar) d_lo06_1;
53 set td_lo06_1 = sqrt(@nobmsd)*@mean/@stddev;
54
54 print td_lo05_1 td_lo06_1 zcrit975;
55 ?->beide beibehalten
55
55 ?Versuch mit dot-Schleife
55 title 'Aufgabe 3b mit "Dot-Schleife"';
56 dot 5 6;
57 select D200.=1;
58 d_lo0._2 = F18-F26;
59 msd(terse,byvar) d_lo0._2;
60 set td_lo0._2 = sqrt(@nobmsd)*@mean/@stddev;
61 print td_lo0._2 zcrit975;
62 enddot;
63 ?sie liefert das gleiche Ergebnis!

```

```

63
63 ?Aufgabe 3c
63 title 'Aufgabe 3c';
64 ?H(0): E(F1|D2005)-E(F1|D2006)=0 / H(A): E(F1|D2005)-E(F1|D2006)
    .ne. 0
64
64 ?Statistiken fuer das Jahr 2005
64 select D2005=1;
65 msd(terse,byvar) F4;
66 set nob05 = @nobmsd;
67 set mean05 = @mean;
68 set stddev05 = @stddev;
69
69 ?Statistiken fuer das Jahr 2006
69 select D2006=1;
70 msd(terse,byvar) F4;
71 set nob06 = @nobmsd;
72 set mean06 = @mean;
73 set stddev06 = @stddev;
74
74 ?Teststatistik
74 set tF1_0506 = (mean05-mean06)/sqrt(stddev05**2/nob05 +
    stddev06**2/nob06);
75 print tF1_0506 zcrit975;
76 ?->ablehnen
    EXECUTION
*****

```

Current sample: 1 to 483

Aufgabe 3.1a
=====

Current sample: 1 to 233

Univariate statistics
=====

*** WARNING in command 7 Procedure MSD: Missing values for series ====>
F18: 21

Number of Observations: 233

	Num.Obs	Mean	Std Dev	Minimum	Maximum
F18	212.00000	0.0047170	0.86259	-1.00000	1.00000
Value	TF18	ZCRIT975			
	0.079621	1.95996			

Aufgabe 3.1b
=====

Current sample: 1 to 233

Univariate statistics
=====

*** WARNING in command 13 Procedure MSD: Missing values for series
 =====> F16: 37

Number of Observations: 233

	Num.Obs	Mean	Std Dev	Minimum	Maximum
F16	196.00000	0.41837	0.75683	-1.00000	1.00000
Value	TF16	EKRIT95			
	7.73906	1.64485			

Aufgabe 3.1c
 =====

Current sample: 1 to 233

*** WARNING in command 18 Procedure GENR: Missing values for series
 =====> F28: 48, F20: 36

Univariate statistics
 =====

*** WARNING in command 19 Procedure MSD: Missing values for series
 =====> D_AMP: 52

Number of Observations: 233

	Num.Obs	Mean	Std Dev	Minimum	Maximum
D_AMP	181.00000	0.0055249	0.40135	-2.00000	2.00000
Value	TD_AMP	ZCRIT975			
	0.18520	1.95996			

Aufgabe 3.1d
 =====

Current sample: 1 to 233

*** WARNING in command 25 Procedure GENR: Missing values for series
 =====> F5: 23, F6: 18

Univariate statistics
 =====

*** WARNING in command 26 Procedure MSD: Missing values for series
 =====> D_WO: 25

Number of Observations: 208

	Mean	Std Dev	Minimum	Maximum
D_WO	-0.23558	0.67908	-2.00000	2.00000

Value	TD_WO	MECRIT95
	-4.66717	-1.64485

Current sample: 1 to 233

Aufgabe 3.1e
=====

*** WARNING in command 33 Procedure SELECT: Missing values for series
=====> FRAU: 250

Current sample: 1 to 1, 5 to 5, ..., 226 to 227 (96 obs.)

Univariate statistics
=====

*** WARNING in command 35 Procedure MSD: Missing values for series
=====> F1: 6

Number of Observations: 90

	Mean	Std Dev	Minimum	Maximum
F1	-0.66667	0.47405	-1.00000	0.00000

*** WARNING in command 38 Procedure SELECT: Missing values for series
=====> MANN: 250

Current sample: 2 to 4, 6 to 6, ..., 228 to 233 (137 obs.)

Univariate statistics
=====

*** WARNING in command 40 Procedure MSD: Missing values for series
=====> F1: 6

Number of Observations: 131

	Mean	Std Dev	Minimum	Maximum
F1	-0.39695	0.56404	-1.00000	1.00000

Value	TFRAU_MANN	ZCRIT975
	-3.94983	1.95996

Aufgabe 3b
=====

Current sample: 1 to 233

*** NOTE: Further warning messages for missing values are suppressed by
 OPTIONS LIMWMISS=n; Current setting ==> 10

Univariate statistics
 =====

Number of Observations: 233

	Num.Obs	Mean	Std Dev	Minimum	Maximum
D_LO05_1	191.00000	-0.015707	0.68423	-2.00000	2.00000

Current sample: 234 to 483

Univariate statistics
 =====

Number of Observations: 250

	Num.Obs	Mean	Std Dev	Minimum	Maximum
D_LO06_1	186.00000	-0.053763	0.66358	-2.00000	2.00000

Value	TD_LO05_1	TD_LO06_1	ZCRIT975
	-0.31725	-1.10497	1.95996

Aufgabe 3b mit "Dot-Schleife"
 =====

Current sample: 1 to 233

Univariate statistics
 =====

Number of Observations: 233

	Num.Obs	Mean	Std Dev	Minimum	Maximum
D_LO05_2	191.00000	-0.015707	0.68423	-2.00000	2.00000

Value	TD_LO05_2	ZCRIT975
	-0.31725	1.95996

Current sample: 234 to 483

Univariate statistics
 =====

Number of Observations: 250

	Num.Obs	Mean	Std Dev	Minimum	Maximum
D_LO06_2	186.00000	-0.053763	0.66358	-2.00000	2.00000

Value	TD_LO06_2	ZCRIT975
	-1.10497	1.95996

Aufgabe 3c

=====

Current sample: 1 to 233

Univariate statistics

=====

Number of Observations: 233

	Num.Obs	Mean	Std Dev	Minimum	Maximum
F4	222.00000	0.17117	0.57668	-1.00000	1.00000

Current sample: 234 to 483

Univariate statistics

=====

Number of Observations: 250

	Num.Obs	Mean	Std Dev	Minimum	Maximum
F4	242.00000	0.037190	0.69576	-1.00000	1.00000

Value	TF1_0506	ZCRIT975
	2.26522	1.95996

END OF OUTPUT.