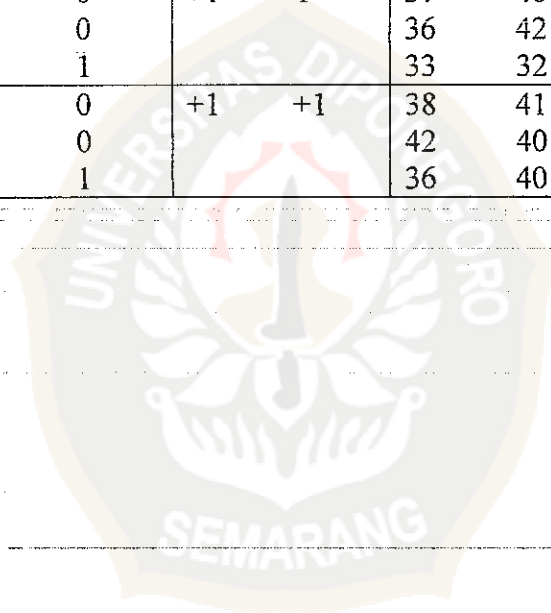


Lampiran 1. Data pengamatan daya rentang kertas

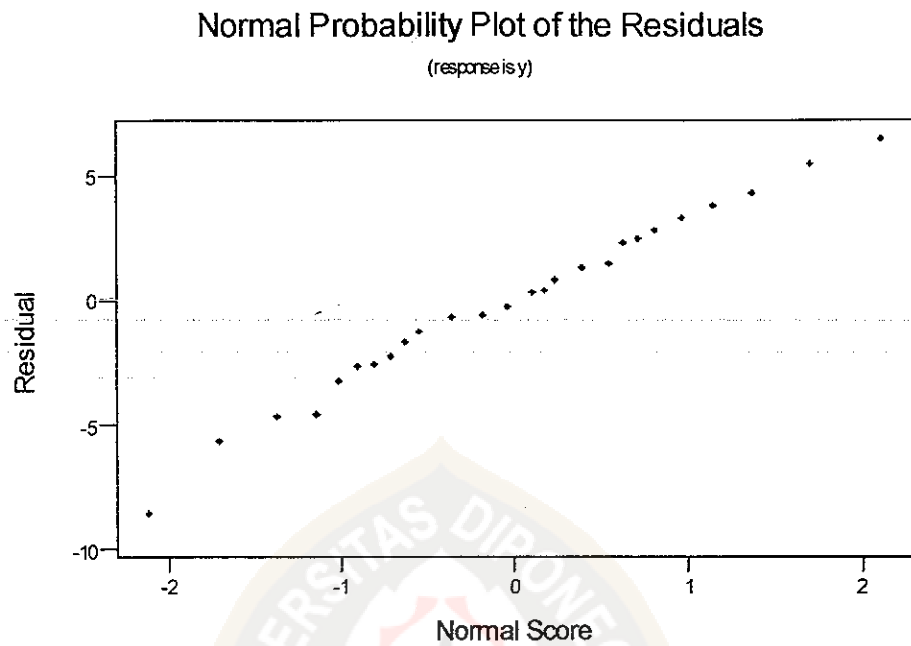
Proporsi jenis kayu			Variabel proses		Daya rentang kertas		
X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	Z <sub>1</sub>	Z <sub>2</sub>	Kel 1	kel 2	kel 3
1	0	0	-1	-1	30	28	31
0	1	0			34	31	35
0	0	1			29	31	32
1	0	0	-1	+1	35	32	37
0	1	0			41	36	40
0	0	1			26	30	34
1	0	0	+1	-1	37	40	41
0	1	0			36	42	39
0	0	1			33	32	39
1	0	0	+1	+1	38	41	40
0	1	0			42	40	44
0	0	1			36	40	45



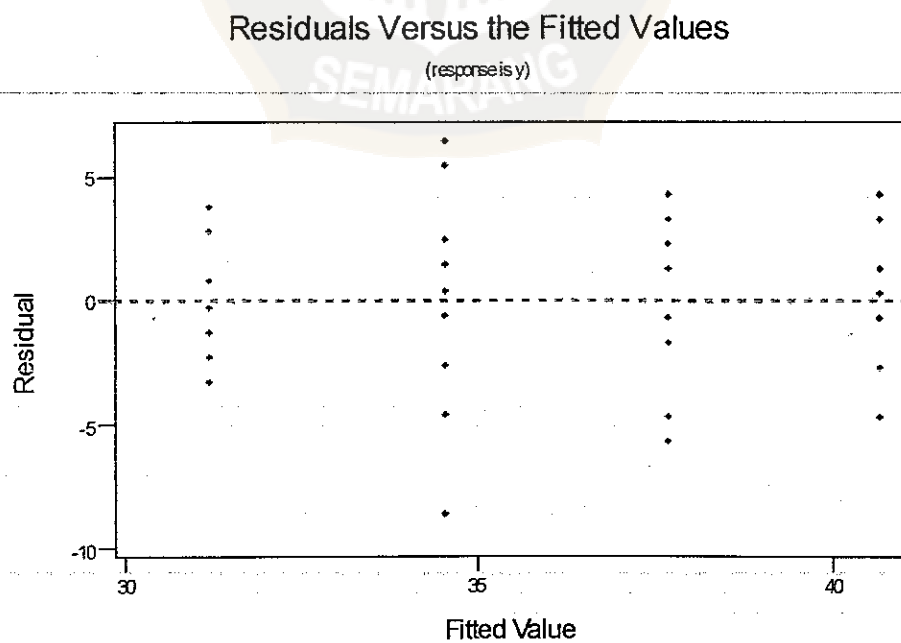
Lampiran 2. Nilai residual dan nilai yang dicocokkan pada data pengamatan daya rentang kertas.

y	z	x	r	RESI1	FITS1
30	1	1	1	-1.22222	31.2222
28	1	1	2	-3.22222	31.2222
31	1	1	3	-0.22222	31.2222
34	1	2	1	2.77778	31.2222
31	1	2	2	-0.22222	31.2222
35	1	2	3	3.77778	31.2222
29	1	3	1	-2.22222	31.2222
31	1	3	2	-0.22222	31.2222
32	1	3	3	0.77778	31.2222
35	2	1	1	0.44444	34.5556
32	2	1	2	-2.55556	34.5556
37	2	1	3	2.44444	34.5556
41	2	2	1	6.44444	34.5556
36	2	2	2	1.44444	34.5556
40	2	2	3	5.44444	34.5556
26	2	3	1	-8.55556	34.5556
30	2	3	2	-4.55556	34.5556
34	2	3	3	-0.55556	34.5556
37	3	1	1	-0.66667	37.6667
40	3	1	2	2.33333	37.6667
41	3	1	3	3.33333	37.6667
36	3	2	1	-1.66667	37.6667
42	3	2	2	4.33333	37.6667
39	3	2	3	1.33333	37.6667
33	3	3	1	-4.66667	37.6667
32	3	3	2	-5.66667	37.6667
39	3	3	3	1.33333	37.6667
38	4	1	1	-2.66667	40.6667
41	4	1	2	0.33333	40.6667
40	4	1	3	-0.66667	40.6667
42	4	2	1	1.33333	40.6667
40	4	2	2	-0.66667	40.6667
44	4	2	3	3.33333	40.6667
36	4	3	1	-4.66667	40.6667
40	4	3	2	-0.66667	40.6667
45	4	3	3	4.33333	40.6667

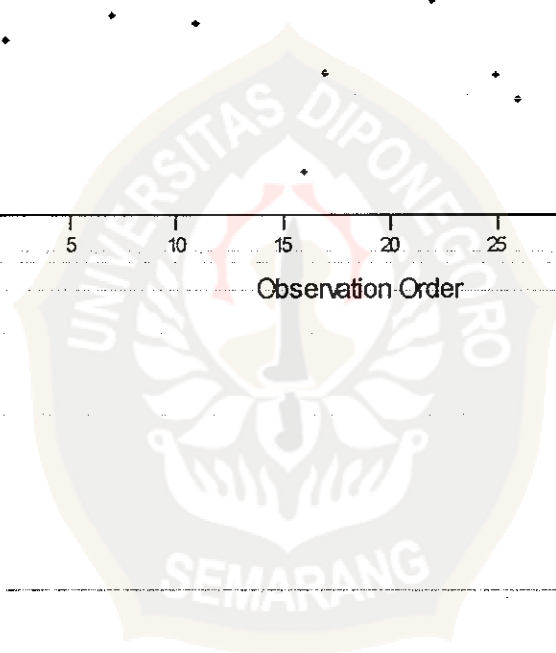
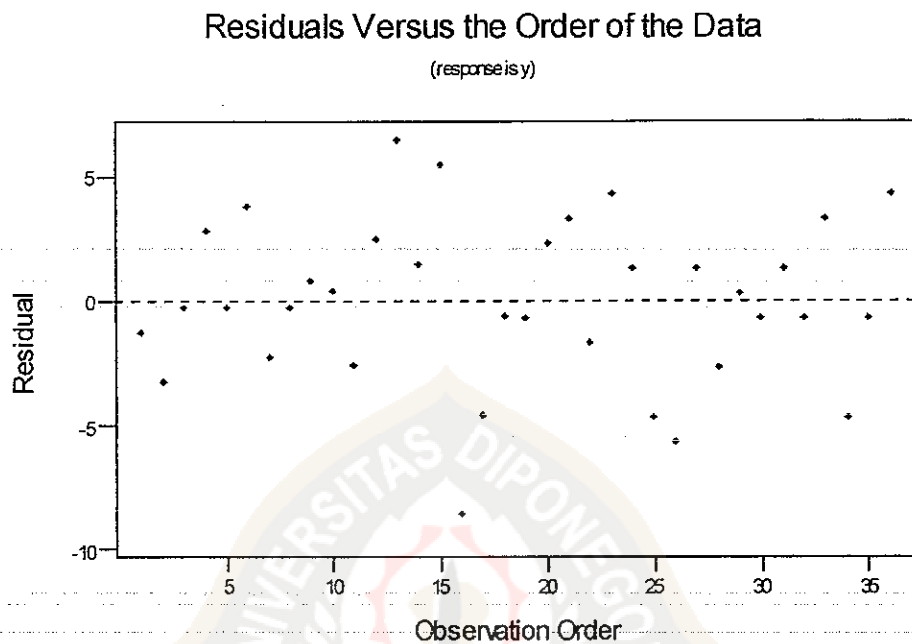
Lampiran 3.a. Plot probabilitas normal dari residual



Lampiran 3.b. Plot residual dan nilai yang dicocokkan



## Lampiran 4. Plot residual dan order data

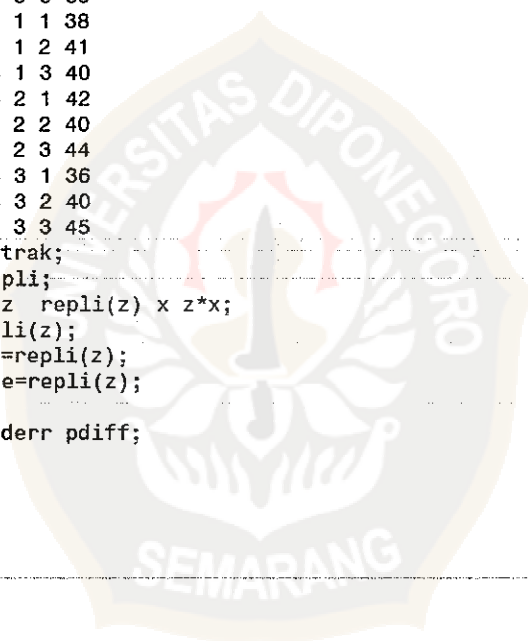


## Lampiran 5. Program SAS untuk data pengamatan daya rentang kertas

```

option ps=100 nonumber nodate;
title 'HASIL ANALISIS SPLIT-PLOT RAK';
data splitrak;
input z x repli y @@;
cards;
1 1 1 30      3 1 1 37
1 1 2 28      3 1 2 40
1 1 3 31      3 1 3 41
1 2 1 34      3 2 1 36
1 2 2 31      3 2 2 42
1 2 3 35      3 2 3 39
1 3 1 29      3 3 1 33
1 3 2 31      3 3 2 32
1 3 3 32      3 3 3 39
2 1 1 35      4 1 1 38
2 1 2 32      4 1 2 41
2 1 3 37      4 1 3 40
2 2 1 41      4 2 1 42
2 2 2 36      4 2 2 40
2 2 3 40      4 2 3 44
2 3 1 26      4 3 1 36
2 3 2 30      4 3 2 40
2 3 3 34      4 3 3 45
proc glm data=splitrak;
  classes x z repli;
  model y=repli z repli(z) x z*x;
  test h=z e=repli(z);
  test h=repli e=repli(z);
  mean z/duncan e=repli(z);
  mean x/duncan;
  lsmeans z*x/stderr pdiff;
run;

```



Lampiran 6. Output program SAS analisis varian untuk pengamatan daya  
rentang kertas

HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure  
Class Level Information

Class	Levels	Values
X	3	1 2 3
Z	4	1 2 3 4
REPLI	3	1 2 3

Number of observations in data set = 36

HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure

Dependent Variable: Y

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	19	735.4166667	38.7061404	7.07	0.0001
Error	16	87.5555556	5.4722222		
Corrected Total	35	822.9722222			
	R-Square	C.V.	Root MSE	Y Mean	
	0.893611	6.492985	2.339278	36.02778	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
REPLI	2	77.5555556	38.7777778	7.09	0.0063
Z	3	445.1944444	148.3981481	27.12	0.0001
REPLI(Z)	6	20.2222222	3.3703704	0.62	0.7148
X	2	117.7222222	58.8611111	10.76	0.0011
X*Z	6	74.7222222	12.4537037	2.28	0.0884

Source	DF	Type III SS	Mean Square	F Value	Pr > F
REPLI	2	77.5555556	38.7777778	7.09	0.0063
Z	3	445.1944444	148.3981481	27.12	0.0001
REPLI(Z)	6	20.2222222	3.3703704	0.62	0.7148
X	2	117.7222222	58.8611111	10.76	0.0011
X*Z	6	74.7222222	12.4537037	2.28	0.0884

Tests of Hypotheses using the Type III MS for REPLI(Z) as an error term

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Z	3	445.1944444	148.3981481	44.03	0.0002

Tests of Hypotheses using the Type III MS for REPLI(Z) as an error term

Source	DF	Type III SS	Mean Square	F Value	Pr > F
REPLI	2	77.5555556	38.7777778	11.51	0.0088

Lampiran 7. Output program SAS uji lanjut petak utama dan anak petak untuk  
pengamatan daya rentang kertas

HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure

Duncan's Multiple Range Test for variable: Y

NOTE: This test controls the type I comparisonwise error rate, not  
the experimentwise error rate

Alpha= 0.05 df= 6 MSE= 3.37037

Number of Means    2     3     4  
Critical Range    2.118 2.195 2.233

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Z
A	40.6667	9	4
B	37.6667	9	3
C	34.5556	9	2
D	31.2222	9	1

HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure

Duncan's Multiple Range Test for variable: Y

NOTE: This test controls the type I comparisonwise error rate, not  
the experimentwise error rate

Alpha= 0.05 df= 16 MSE= 5.472222

Number of Means    2     3  
Critical Range    2.025 2.123

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	X
A	38.3333	12	2
B	35.8333	12	1
B	33.9167	12	3



Lampiran 8. Output program SAS uji lanjut interaksi petak utama dan anak petak untuk  
pengamatan daya rentang kertas

## HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure  
Least Squares Means

X	Z	Y LSMEAN	Std Err LSMEAN	Pr >  T  HO:LSMEAN=0	LSMEAN Number
1	1	29.6666667	1.3505829	0.0001	1
1	2	34.6666667	1.3505829	0.0001	2
1	3	39.3333333	1.3505829	0.0001	3
1	4	39.6666667	1.3505829	0.0001	4
2	1	33.3333333	1.3505829	0.0001	5
2	2	39.0000000	1.3505829	0.0001	6
2	3	39.0000000	1.3505829	0.0001	7
2	4	42.0000000	1.3505829	0.0001	8
3	1	30.6666667	1.3505829	0.0001	9
3	2	30.0000000	1.3505829	0.0001	10
3	3	34.6666667	1.3505829	0.0001	11
3	4	40.3333333	1.3505829	0.0001	12

## Pr &gt; |T| HO: LSMEAN(i)=LSMEAN(j)

i/j	1	2	3	4	5	6	7	8	9	10	11
1	.	0.0187	0.0001	0.0001	0.0729	0.0002	0.0002	0.0001	0.6078	0.8636	0.0187
2	0.0187	.	0.0265	0.0187	0.4952	0.0375	0.0375	0.0014	0.0525	0.0265	1.0000
3	0.0001	0.0265	.	0.8636	0.0063	0.8636	0.8636	0.1817	0.0003	0.0002	0.0265
4	0.0001	0.0187	0.8636	.	0.0044	0.7316	0.7316	0.2395	0.0002	0.0001	0.0187
5	0.0729	0.4952	0.0063	0.0044	.	0.0091	0.0091	0.0003	0.1817	0.1001	0.4952
6	0.0002	0.0375	0.8636	0.7316	0.0091	.	1.0000	0.1358	0.0005	0.0002	0.0375
7	0.0002	0.0375	0.8636	0.7316	0.0091	1.0000	.	0.1358	0.0005	0.0002	0.0375
8	0.0001	0.0014	0.1817	0.2395	0.0003	0.1358	0.1358	.	0.0001	0.0001	0.0014
9	0.6078	0.0525	0.0003	0.0002	0.1817	0.0005	0.0005	0.0001	.	0.7316	0.0525
10	0.8636	0.0265	0.0002	0.0001	0.1001	0.0002	0.0002	0.0001	0.7316	.	0.0265
11	0.0187	1.0000	0.0265	0.0187	0.4952	0.0375	0.0375	0.0014	0.0525	0.0265	.
12	0.0001	0.0091	0.6078	0.7316	0.0021	0.4952	0.4952	0.3958	0.0001	0.0001	0.0091

## Pr &gt; |T| HO: LSMEAN(i)=LSMEAN(j)

i/j	12
1	0.0001
2	0.0091
3	0.6078
4	0.7316
5	0.0021
6	0.4952
7	0.4952
8	0.3958
9	0.0001
10	0.0001
11	0.0091
12	.

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

## Lampiran 9

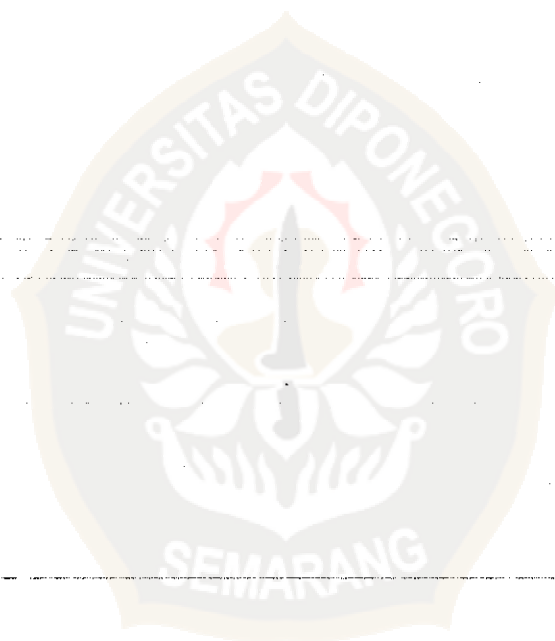
Data pengamatan nilai ketebalan *vinyl*

Proporsi <i>plasticizer</i>			Variabel proses		Skala nilai ketebalan <i>vinyl</i>	
$x_1$	$x_2$	$x_3$	$z_1$	$z_2$	kel 1	kel 2
1	0	0	-1	-1	7	8
0	1	0			4	4
0	0	1			5	7
0.5	0.5	0			7	8
0.5	0	0.5			8	10
0	0.5	0.5			4	3
1	0	0	-1	+1	10	13
0	1	0			8	8
0	0	1			3	7
0.5	0.5	0			12	16
0.5	0	0.5			9	13
0	0.5	0.5			7	10
1	0	0	+1	-1	10	12
0	1	0			5	8
0	0	1			9	8
0.5	0.5	0			14	15
0.5	0	0.5			12	11
0	0.5	0.5			8	7
1	0	0	+1	+1	6	5
0	1	0			7	4
0	0	1			6	7
0.5	0.5	0			5	5
0.5	0	0.5			4	6
0	0.5	0.5			7	8

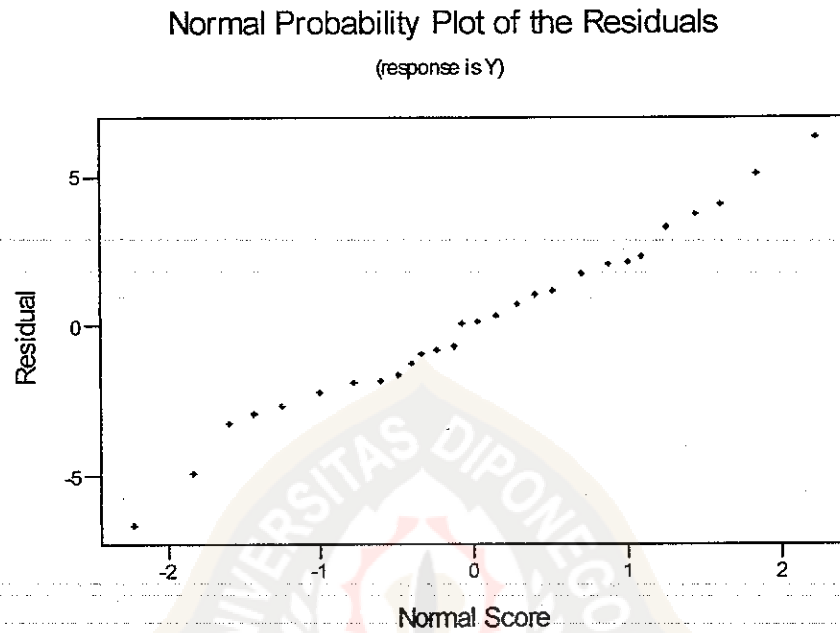
Lampiran 10. Nilai residual dan nilai yang dicocokkan pada data pengamatan nilai ketebalan *vinyl*

Y	Z	X	R	RESI1	FITS1
7	1	1	1	0.75000	6.25000
8	1	1	2	1.75000	6.25000
4	1	2	1	-2.25000	6.25000
4	1	2	2	-2.25000	6.25000
5	1	3	1	-1.25000	6.25000
7	1	3	2	0.75000	6.25000
7	1	4	1	0.75000	6.25000
8	1	4	2	1.75000	6.25000
8	1	5	1	1.75000	6.25000
10	1	5	2	3.75000	6.25000
4	1	6	1	-2.25000	6.25000
3	1	6	2	-3.25000	6.25000
10	2	1	1	0.33333	9.66667
13	2	1	2	3.33333	9.66667
8	2	2	1	-1.66667	9.66667
8	2	2	2	-1.66667	9.66667
3	2	3	1	-6.66667	9.66667
7	2	3	2	-2.66667	9.66667
12	2	4	1	2.33333	9.66667
16	2	4	2	6.33333	9.66667
9	2	5	1	-0.66667	9.66667
13	2	5	2	3.33333	9.66667
7	2	6	1	-2.66667	9.66667
10	2	6	2	0.33333	9.66667
10	3	1	1	0.08333	9.91667
12	3	1	2	2.08333	9.91667
5	3	2	1	-4.91667	9.91667
8	3	2	2	-1.91667	9.91667
9	3	3	1	-0.91667	9.91667
8	3	3	2	-1.91667	9.91667
14	3	4	1	4.08333	9.91667
15	3	4	2	5.08333	9.91667
12	3	5	1	2.08333	9.91667
11	3	5	2	1.08333	9.91667
8	3	6	1	-1.91667	9.91667
7	3	6	2	-2.91667	9.91667
6	4	1	1	0.16667	5.83333
5	4	1	2	-0.83333	5.83333
7	4	2	1	1.16667	5.83333
4	4	2	2	-1.83333	5.83333
6	4	3	1	0.16667	5.83333
7	4	3	2	1.16667	5.83333
5	4	4	1	-0.83333	5.83333
5	4	4	2	-0.83333	5.83333

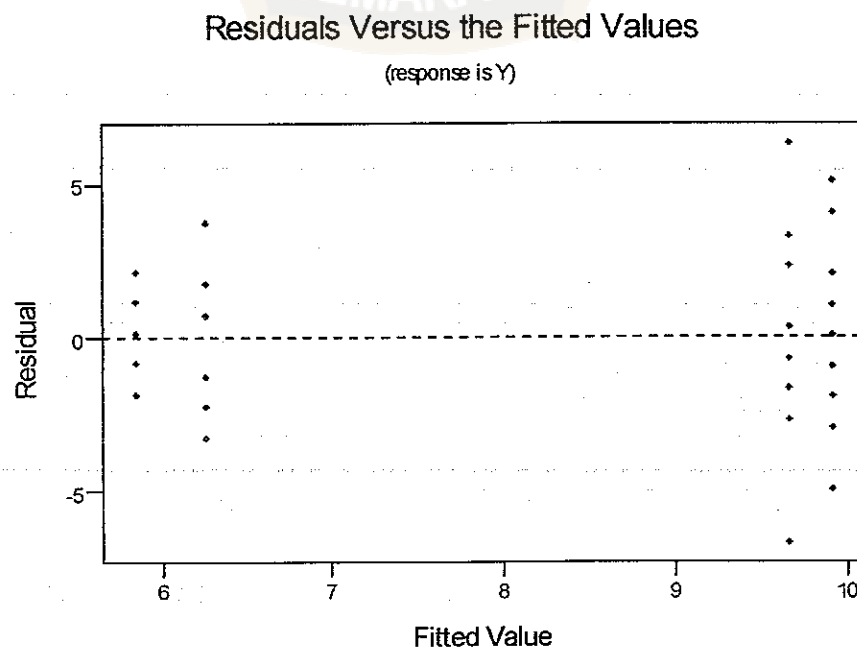
4	4	5	1	-1.83333	5.83333
6	4	5	2	0.16667	5.83333
7	4	6	1	1.16667	5.83333
8	4	6	2	2.16667	5.83333



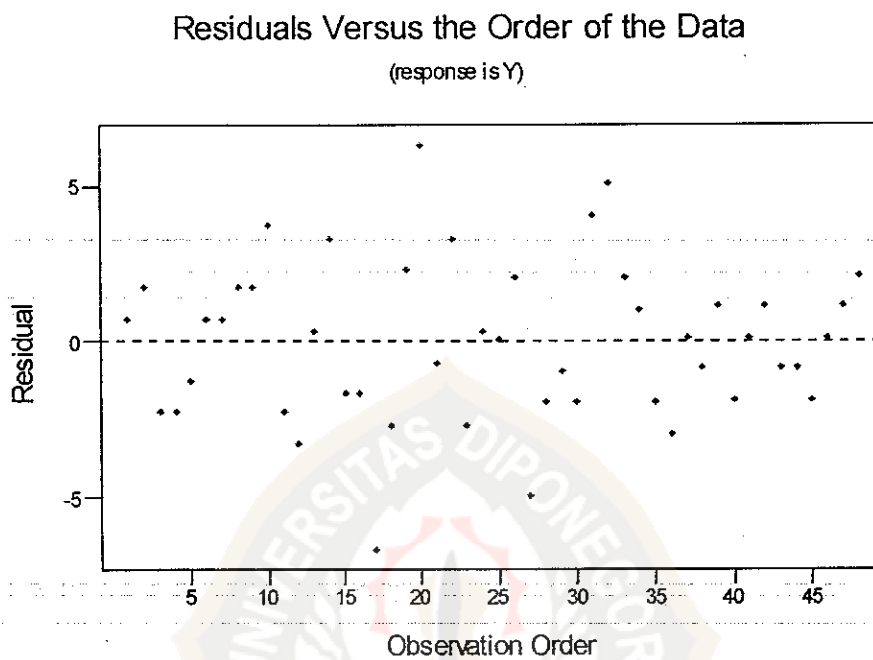
Lampiran 11. a. Plot probabilitas normal dan residual



Lampiran 11.b. Plot residual dan nilai yang dicocokkan



## Lampiran 12. Plot residual dan order data



Lampiran 13. Program SAS untuk data pengamatan nilai ketebalan *vinyl*

```

option ps=100 nonumber nodate;
title 'HASIL ANALISIS SPLIT-PLOT RAK';
data splitrak;
input z x repli y @@;
cards;
1 1 1 7          3 1 1 10
1 1 2 8          3 1 2 12
1 2 1 4          3 2 1 5
1 2 2 4          3 2 2 8
1 3 1 5          3 3 1 9
1 3 2 7          3 3 2 8
1 4 1 7          3 4 1 14
1 4 2 8          3 4 2 15
1 5 1 8          3 5 1 12
1 5 2 10         3 5 2 11
1 6 1 4          3 6 1 8
1 6 2 3          3 6 2 7
2 1 1 10         4 1 1 6
2 1 2 13         4 1 2 5
2 2 1 8          4 2 1 7
2 2 2 8          4 2 2 4
2 3 1 3          4 3 1 6
2 3 2 7          4 3 2 7
2 4 1 12         4 4 1 5
2 4 2 16         4 4 2 5
2 5 1 9          4 5 1 4
2 5 2 13         4 5 2 6
2 6 1 7          4 6 1 7
2 6 2 10         4 6 2 8
proc glm data=splitrak;
  classes x z repli;
  model y=repli z repli(z) x z*x;
  test h=z e=repli(z);
  test h=repli e=repli(z);
  mean z/duncan e=repli(z);
  mean x/duncan;
  lsmeans z*x/stderr pdiff;
run;

```

Lampiran 14. Output analisis varian untuk data pengamatan nilai ketebalan *vinyl*

## HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure  
Class Level Information

Class	Levels	Values
X	6	1 2 3 4 5 6
Z	4	1 2 3 4
REPLI	2	1 2

Number of observations in data set = 48

## HASIL ANALISIS SPLIT-PLOT RAK

## General Linear Models Procedure

Dependent Variable: Y

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	27	444.5000000	16.4629630	13.08	0.0001
Error	20	25.1666667	1.2583333		
Corrected Total	47	469.6666667			

R-Square 0.946416      C.V. 14.16953      Root MSE 1.121755      Y Mean 7.916667

Source	DF	Type I SS	Mean Square	F Value	Pr > F
REPLI	1	14.0833333	14.0833333	11.19	0.0032
Z	3	170.1666667	56.7222222	45.08	0.0001
REPLI(Z)	3	15.7500000	5.2500000	4.17	0.0190
X	5	118.9166667	23.7833333	18.90	0.0001
X*Z	15	125.5833333	8.3722222	6.65	0.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
REPLI	1	14.0833333	14.0833333	11.19	0.0032
Z	3	170.1666667	56.7222222	45.08	0.0001
REPLI(Z)	3	15.7500000	5.2500000	4.17	0.0190
X	5	118.9166667	23.7833333	18.90	0.0001
X*Z	15	125.5833333	8.3722222	6.65	0.0001

Tests of Hypotheses using the Type III MS for REPLI(Z) as an error term

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Z	3	170.1666667	56.7222222	10.80	0.0408

Tests of Hypotheses using the Type III MS for REPLI(Z) as an error term

Source	DF	Type III SS	Mean Square	F Value	Pr > F
REPLI	1	14.0833333	14.0833333	2.68	0.2000



## Lampiran 15. Output uji Duncan untuk petak utama dan anak petak untuk data

pengamatan nilai ketebalan *vinyl*

## HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure

Duncan's Multiple Range Test for variable: Y

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 3 MSE= 5.25

Number of Means	2	3	4
Critical Range	2.977	2.987	2.958

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Z
A	9.9167	12	3
A			
A	9.6667	12	2
B	6.2500	12	1
B			
B	5.8333	12	4

## HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure

Duncan's Multiple Range Test for variable: Y

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 20 MSE= 1.258333

Number of Means	2	3	4	5	6
Critical Range	1.170	1.228	1.265	1.291	1.310

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	X
A	10.2500	8	4
A			
B	9.1250	8	5
B			
B	8.8750	8	1
C	6.7500	8	6
C			
C	6.5000	8	3
C			
C	6.0000	8	2

Lampiran 16. Output uji Duncan untuk interaksi petak utama dan anak petak untuk data  
pengamatan nilai ketebalan *vinyl*

## HASIL ANALISIS SPLIT-PLOT RAK

General Linear Models Procedure  
Least Squares Means

X	Z	Y LSMEAN	Std Err LSMEAN	Pr >  T  HO:LSMEAN=0	LSMEAN Number
1	1	7.5000000	0.7932003	0.0001	1
1	2	11.5000000	0.7932003	0.0001	2
1	3	11.0000000	0.7932003	0.0001	3
1	4	5.5000000	0.7932003	0.0001	4
2	1	4.0000000	0.7932003	0.0001	5
2	2	8.0000000	0.7932003	0.0001	6
2	3	6.5000000	0.7932003	0.0001	7
2	4	5.5000000	0.7932003	0.0001	8
3	1	6.0000000	0.7932003	0.0001	9
3	2	5.0000000	0.7932003	0.0001	10
3	3	8.5000000	0.7932003	0.0001	11
3	4	6.5000000	0.7932003	0.0001	12
4	1	7.5000000	0.7932003	0.0001	13
4	2	14.0000000	0.7932003	0.0001	14
4	3	14.5000000	0.7932003	0.0001	15
4	4	5.0000000	0.7932003	0.0001	16
5	1	9.0000000	0.7932003	0.0001	17
5	2	11.0000000	0.7932003	0.0001	18
5	3	11.5000000	0.7932003	0.0001	19
5	4	5.0000000	0.7932003	0.0001	20
6	1	3.5000000	0.7932003	0.0003	21
6	2	8.5000000	0.7932003	0.0001	22
6	3	7.5000000	0.7932003	0.0001	23
6	4	7.5000000	0.7932003	0.0001	24

Pr > |T| HO: LSMEAN(i)=LSMEAN(j)

i/j	1	2	3	4	5	6	7	8	9	10	11
1	.	0.0019	0.0054	0.0898	0.0054	0.6606	0.3833	0.0898	0.1962	0.0375	0.3833
2	0.0019	.	0.6606	0.0001	0.0001	0.0054	0.0002	0.0001	0.0001	0.0001	0.0146
3	0.0054	0.6606	.	0.0001	0.0001	0.0146	0.0007	0.0001	0.0002	0.0001	0.0375
4	0.0898	0.0001	0.0001	.	0.1962	0.0375	0.3833	1.0000	0.6606	0.6606	0.0146
5	0.0054	0.0001	0.0001	0.1962	.	0.0019	0.0375	0.1962	0.0898	0.3833	0.0007
6	0.6606	0.0054	0.0146	0.0375	0.0019	.	0.1962	0.0375	0.0898	0.0146	0.6606
7	0.3833	0.0002	0.0007	0.3833	0.0375	0.1962	.	0.3833	0.6606	0.1962	0.0898
8	0.0898	0.0001	0.0001	1.0000	0.1962	0.0375	0.3833	.	0.6606	0.6606	0.0146
9	0.1962	0.0001	0.0002	0.6606	0.0898	0.0898	0.6606	0.6606	.	0.3833	0.0375
10	0.0375	0.0001	0.0001	0.6606	0.3833	0.0146	0.1962	0.6606	0.3833	.	0.0054
11	0.3833	0.0146	0.0375	0.0146	0.0007	0.6606	0.0898	0.0146	0.0375	0.0054	.
12	0.3833	0.0002	0.0007	0.3833	0.0375	0.1962	1.0000	0.3833	0.6606	0.1962	0.0898
13	1.0000	0.0019	0.0054	0.0898	0.0054	0.6606	0.3833	0.0898	0.1962	0.0375	0.3833
14	0.0001	0.0375	0.0146	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
15	0.0001	0.0146	0.0054	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
16	0.0375	0.0001	0.0001	0.6606	0.3833	0.0146	0.1962	0.6606	0.3833	1.0000	0.0054
17	0.1962	0.0375	0.0898	0.0054	0.0002	0.3833	0.0375	0.0054	0.0146	0.0019	0.6606
18	0.0054	0.6606	1.0000	0.0001	0.0001	0.0146	0.0007	0.0001	0.0002	0.0001	0.0375
19	0.0019	1.0000	0.6606	0.0001	0.0001	0.0054	0.0002	0.0001	0.0001	0.0001	0.0146
20	0.0375	0.0001	0.0001	0.6606	0.3833	0.0146	0.1962	0.6606	0.3833	1.0000	0.0054
21	0.0019	0.0001	0.0001	0.0898	0.6606	0.0007	0.0146	0.0898	0.0375	0.1962	0.0002
22	0.3833	0.0146	0.0375	0.0146	0.0007	0.6606	0.0898	0.0146	0.0375	0.0054	1.0000
23	1.0000	0.0019	0.0054	0.0898	0.0054	0.6606	0.3833	0.0898	0.1962	0.0375	0.3833
24	1.0000	0.0019	0.0054	0.0898	0.0054	0.6606	0.3833	0.0898	0.1962	0.0375	0.3833

Pr &gt; |T| H0: LSMEAN(i)=LSMEAN(j)

i/j	12	13	14	15	16	17	18	19	20	21	22
1	0.3833	1.0000	0.0001	0.0001	0.0375	0.1962	0.0054	0.0019	0.0375	0.0019	0.3833
2	0.0002	0.0019	0.0375	0.0146	0.0001	0.0375	0.6606	1.0000	0.0001	0.0001	0.0146
3	0.0007	0.0054	0.0146	0.0054	0.0001	0.0898	1.0000	0.6606	0.0001	0.0001	0.0375
4	0.3833	0.0898	0.0001	0.0001	0.6606	0.0054	0.0001	0.0001	0.6606	0.0898	0.0146
5	0.0375	0.0054	0.0001	0.0001	0.3833	0.0002	0.0001	0.0001	0.3833	0.6606	0.0007
6	0.1962	0.6606	0.0001	0.0001	0.0146	0.3833	0.0146	0.0054	0.0146	0.0007	0.6600
7	1.0000	0.3833	0.0001	0.0001	0.1962	0.0375	0.0007	0.0002	0.1962	0.0140	0.0898
8	0.3833	0.0898	0.0001	0.0001	0.6606	0.0054	0.0001	0.0001	0.6606	0.0880	0.0146
9	0.6606	0.1962	0.0001	0.0001	0.3833	0.0146	0.0002	0.0001	0.3833	0.0375	0.0375
10	0.1962	0.0375	0.0001	0.0001	1.0000	0.0019	0.0001	0.0001	1.0000	0.1962	0.0054
11	0.0898	0.3833	0.0001	0.0001	0.0054	0.6606	0.0375	0.0146	0.0054	0.0002	1.0000
12	0.3833	0.3833	0.0001	0.0001	0.1962	0.0375	0.0007	0.0002	0.1962	0.0146	0.0898
13	0.3833	.	0.0001	0.0001	0.0375	0.1962	0.0054	0.0019	0.0375	0.0019	0.3833
14	0.0001	0.0001	.	0.6606	0.0001	0.0002	0.0146	0.0375	0.0001	0.0001	0.0001
15	0.0001	0.0001	0.6606	.	0.0001	0.0001	0.0054	0.0146	0.0001	0.0001	0.0001
16	0.1962	0.0375	0.0001	0.0001	.	0.0019	0.0001	0.0001	1.0000	0.1962	0.0054
17	0.0375	0.1962	0.0002	0.0001	0.0019	.	0.0898	0.0375	0.0019	0.0001	0.6606
18	0.0007	0.0054	0.0146	0.0054	0.0001	0.0898	.	0.6606	0.0001	0.0001	0.0375
19	0.0002	0.0019	0.0375	0.0146	0.0001	0.0375	0.6606	.	0.0001	0.0001	0.0146
20	0.1962	0.0375	0.0001	0.0001	1.0000	0.0019	0.0001	0.0001	.	0.1962	0.0054
21	0.0146	0.0019	0.0001	0.0001	0.1962	0.0001	0.0001	0.0001	0.1962	.	0.0002
22	0.0898	0.3833	0.0001	0.0001	0.0054	0.6606	0.0375	0.0146	0.0054	0.0002	.
23	0.3833	1.0000	0.0001	0.0001	0.0375	0.1962	0.0054	0.0019	0.0375	0.0019	0.3833
24	0.3833	1.0000	0.0001	0.0001	0.0375	0.1962	0.0054	0.0019	0.0375	0.0019	0.3833

HASIL ANALISIS SPLIT-PLOT RAK  
 General Linear Models Procedure  
 Least Squares Means  
 Least Squares Means for effect X\*Z  
 Pr > |T| H0: LSMEAN(i)=LSMEAN(j)

Dependent Variable: Y

i/j	23	24
1	1.0000	1.0000
2	0.0019	0.0019
3	0.0054	0.0054
4	0.0898	0.0898
5	0.0054	0.0054
6	0.6606	0.6606
7	0.3833	0.3833
8	0.0898	0.0898
9	0.1962	0.1962
10	0.0375	0.0375
11	0.3833	0.3833
12	0.3833	0.3833
13	1.0000	1.0000
14	0.0001	0.0001
15	0.0001	0.0001
16	0.0375	0.0375
17	0.1962	0.1962
18	0.0054	0.0054
19	0.0019	0.0019
20	0.0375	0.0375
21	0.0019	0.0019
22	0.3833	0.3833
23	.	1.0000
24	1.0000	.

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

Lampiran 17. Tabel Distribusi F (  $\alpha = 5\%$  )

$f_{0,05, v_1, v_2}$

$v_2 \backslash v_1$		Derajat kebebasan untuk pembilang ( $v_1$ )																	
		1	2	3	4	5	6	7	8	9	10	12	15	20	24	30	40	60	120
1	161,4	199,6	215,7	224,6	230,2	234,0	236,8	238,9	240,5	241,9	243,9	245,9	248,0	249,1	250,1	251,1	252,2	253,3	254,3
2	18,51	19,00	19,16	19,25	19,30	19,33	19,35	19,37	19,38	19,40	19,41	19,43	19,45	19,45	19,46	19,47	19,48	19,49	19,50
3	10,13	9,55	9,28	9,12	9,01	8,94	8,89	8,85	8,81	8,79	8,74	8,70	8,66	8,64	8,62	8,59	8,57	8,55	8,53
4	7,71	6,94	6,59	6,39	6,26	6,16	6,09	6,04	6,00	5,96	5,91	5,86	5,80	5,77	5,75	5,72	5,69	5,66	5,63
5	6,61	5,79	5,41	5,19	5,05	4,95	4,88	4,82	4,77	4,74	4,68	4,62	4,56	4,53	4,50	4,46	4,43	4,40	4,36
6	5,99	5,14	4,76	4,53	4,39	4,28	4,21	4,15	4,10	4,06	4,00	3,94	3,87	3,84	3,81	3,77	3,74	3,70	3,67
7	5,59	4,74	4,35	4,12	3,97	3,87	3,79	3,73	3,68	3,64	3,57	3,51	3,44	3,41	3,38	3,34	3,30	3,27	3,23
8	5,32	4,46	4,07	3,84	3,69	3,58	3,50	3,44	3,39	3,35	3,28	3,22	3,15	3,12	3,08	3,04	3,01	2,97	2,93
9	5,12	4,26	3,86	3,63	3,48	3,37	3,29	3,23	3,18	3,14	3,07	3,01	2,94	2,90	2,86	2,83	2,79	2,75	2,71
10	4,96	4,10	3,71	3,48	3,33	3,22	3,14	3,07	3,02	2,98	2,91	2,85	2,77	2,74	2,70	2,66	2,62	2,58	2,54
11	4,84	3,98	3,59	3,36	3,20	3,09	3,01	2,95	2,90	2,85	2,79	2,72	2,65	2,61	2,57	2,53	2,49	2,45	2,40
12	4,75	3,89	3,49	3,26	3,11	3,00	2,91	2,85	2,80	2,75	2,69	2,62	2,54	2,51	2,47	2,43	2,38	2,34	2,30
13	4,67	3,81	3,41	3,18	3,03	2,92	2,83	2,77	2,71	2,67	2,60	2,53	2,46	2,42	2,38	2,34	2,30	2,25	2,21
14	4,60	3,74	3,34	3,11	2,96	2,85	2,76	2,70	2,65	2,60	2,53	2,46	2,39	2,35	2,31	2,27	2,22	2,18	2,13
15	4,54	3,68	3,29	3,06	2,90	2,79	2,71	2,64	2,59	2,54	2,48	2,40	2,33	2,29	2,25	2,20	2,16	2,11	2,07
16	4,49	3,63	3,24	3,01	2,85	2,74	2,66	2,59	2,54	2,49	2,42	2,35	2,28	2,24	2,19	2,15	2,11	2,06	2,01
17	4,45	3,59	3,20	2,98	2,81	2,70	2,61	2,55	2,49	2,45	2,38	2,31	2,23	2,19	2,15	2,10	2,06	2,01	1,96
18	4,41	3,55	3,16	2,93	2,77	2,66	2,58	2,51	2,46	2,41	2,34	2,27	2,19	2,15	2,11	2,06	2,02	1,97	1,92
19	4,38	3,52	3,13	2,90	2,74	2,63	2,54	2,48	2,42	2,38	2,31	2,23	2,16	2,11	2,07	2,03	1,98	1,93	1,88
20	4,35	3,49	3,10	2,87	2,71	2,60	2,51	2,45	2,39	2,35	2,28	2,20	2,12	2,08	2,04	1,99	1,95	1,90	1,84
21	4,32	3,47	3,07	2,84	2,68	2,57	2,49	2,42	2,37	2,32	2,25	2,18	2,10	2,05	2,01	1,96	1,92	1,87	1,81
22	4,30	3,44	3,05	2,82	2,66	2,55	2,46	2,40	2,34	2,30	2,23	2,15	2,07	2,03	1,98	1,94	1,89	1,84	1,78
23	4,28	3,42	3,03	2,80	2,64	2,53	2,44	2,37	2,32	2,27	2,20	2,13	2,05	2,01	1,96	1,91	1,86	1,81	1,76
24	4,26	3,40	3,01	2,78	2,62	2,51	2,42	2,36	2,30	2,25	2,18	2,11	2,03	1,98	1,94	1,89	1,84	1,79	1,73
25	4,24	3,39	2,99	2,76	2,60	2,49	2,40	2,34	2,28	2,24	2,16	2,09	2,01	1,96	1,92	1,87	1,82	1,77	1,71
26	4,23	3,37	2,98	2,74	2,59	2,47	2,39	2,32	2,27	2,22	2,15	2,07	1,99	1,95	1,90	1,85	1,80	1,75	1,69
27	4,21	3,35	2,96	2,73	2,57	2,46	2,37	2,31	2,25	2,20	2,13	2,06	1,97	1,93	1,88	1,84	1,79	1,73	1,67
28	4,20	3,34	2,95	2,71	2,56	2,45	2,36	2,29	2,24	2,19	2,12	2,04	1,96	1,91	1,87	1,82	1,77	1,71	1,65
29	4,18	3,33	2,93	2,70	2,55	2,43	2,35	2,28	2,22	2,17	2,10	2,03	1,94	1,90	1,85	1,81	1,75	1,70	1,64
30	4,17	3,32	2,92	2,69	2,53	2,42	2,33	2,27	2,21	2,16	2,09	2,01	1,93	1,89	1,84	1,79	1,74	1,68	1,62
40	4,08	3,23	2,84	2,61	2,45	2,34	2,25	2,18	2,12	2,08	2,00	1,92	1,84	1,79	1,74	1,69	1,64	1,58	1,51
60	4,00	3,15	2,76	2,53	2,37	2,25	2,17	2,10	2,04	1,99	1,92	1,84	1,75	1,70	1,65	1,59	1,53	1,47	1,39
120	3,92	3,07	2,68	2,45	2,29	2,17	2,09	2,02	1,96	1,91	1,83	1,75	1,66	1,61	1,55	1,50	1,43	1,35	1,25
$\infty$	3,84	3,00	2,60	2,37	2,21	2,10	2,01	1,94	1,88	1,83	1,75	1,67	1,57	1,52	1,46	1,39	1,32	1,22	1,00

Lampiran 18. Tabel Distribusi t

$\nu \backslash \alpha$	.40	.25	.10	.05	.025	.01	.005	.0025	.001	.0005
1	.325	1.000	3.078	6.314	12.706	31.821	63.657	127.32	318.31	636.62
2	.289	.816	1.886	2.920	4.303	6.965	9.925	14.089	23.326	31.598
3	.277	.765	1.638	2.353	3.182	4.541	5.841	7.453	10.213	12.924
4	.271	.741	1.533	2.132	2.776	3.747	4.604	5.598	7.173	8.610
5	.267	.727	1.476	2.015	2.571	3.365	4.032	4.773	5.893	6.869
6	.265	.722	1.440	1.943	2.447	3.143	3.707	4.317	5.208	5.959
7	.263	.711	1.415	1.895	2.365	2.998	3.499	4.019	4.705	5.408
8	.262	.706	1.397	1.860	2.306	2.896	3.355	3.833	4.501	5.041
9	.261	.703	1.383	1.833	2.262	2.821	3.250	3.690	4.297	4.781
10	.260	.700	1.372	1.812	2.228	2.764	3.169	3.581	4.144	4.587
11	.260	.697	1.363	1.796	2.201	2.718	3.106	3.497	4.025	4.437
12	.259	.695	1.356	1.782	2.179	2.681	3.055	3.428	3.930	4.318
13	.259	.694	1.350	1.771	2.160	2.650	3.012	3.372	3.852	4.221
14	.258	.692	1.345	1.761	2.145	2.624	2.977	3.326	3.787	4.140
15	.258	.691	1.341	1.753	2.131	2.602	2.947	3.286	3.733	4.073
16	.258	.690	1.337	1.746	2.120	2.583	2.921	3.252	3.686	4.015
17	.257	.689	1.333	1.740	2.110	2.567	2.898	3.222	3.646	3.965
18	.257	.688	1.330	1.734	2.101	2.552	2.878	3.197	3.610	3.922
19	.257	.688	1.328	1.729	2.093	2.539	2.861	3.174	3.579	3.883
20	.257	.687	1.325	1.725	2.086	2.528	2.845	3.153	3.552	3.850
21	.257	.686	1.323	1.721	2.080	2.518	2.831	3.135	3.527	3.819
22	.256	.686	1.321	1.717	2.074	2.508	2.819	3.119	3.505	3.792
23	.256	.685	1.319	1.714	2.069	2.500	2.807	3.104	3.485	3.767
24	.256	.685	1.318	1.711	2.064	2.492	2.797	3.091	3.467	3.745
25	.256	.684	1.316	1.708	2.060	2.485	2.787	3.078	3.450	3.725
26	.256	.684	1.315	1.706	2.056	2.479	2.779	3.067	3.435	3.707
27	.256	.684	1.314	1.703	2.052	2.473	2.771	3.057	3.421	3.690
28	.256	.683	1.313	1.701	2.048	2.467	2.763	3.047	3.408	3.674
29	.256	.683	1.311	1.699	2.045	2.462	2.756	3.038	3.396	3.659
30	.256	.683	1.310	1.697	2.042	2.457	2.750	3.030	3.385	3.646
40	.255	.681	1.303	1.684	2.021	2.423	2.704	2.971	3.307	3.551
60	.254	.679	1.296	1.671	2.000	2.390	2.660	2.915	3.232	3.460
120	.254	.677	1.289	1.658	1.980	2.358	2.617	2.860	3.160	3.373
$\infty$	.253	.674	1.282	1.645	1.960	2.326	2.576	2.807	3.090	3.291

$\nu$  = degrees of freedom.

\*Adapted with permission from *Biometrika Tables for Statisticians*, Vol. 1, 3rd edition, by E. S. Pearson and H. O. Hartley, Cambridge University Press, Cambridge, 1966.

Lampiran 19. Tabel Uji Wilayah Berganda Duncan

$r_{05}(p, D)$											
$p$											
2	3	4	5	6	7	8	9	10	20	50	100
18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09
4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
3.93	4.01	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02
3.64	3.74	3.79	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
3.46	3.58	3.64	3.68	3.68	3.68	3.68	3.68	3.68	3.68	3.68	3.68
3.35	3.47	3.54	3.58	3.60	3.61	3.61	3.61	3.61	3.61	3.61	3.61
3.26	3.39	3.47	3.52	3.55	3.56	3.56	3.56	3.56	3.56	3.56	3.56
3.20	3.34	3.41	3.47	3.50	3.52	3.52	3.52	3.52	3.52	3.52	3.52
3.15	3.30	3.37	3.43	3.46	3.47	3.47	3.47	3.47	3.48	3.48	3.48
3.11	3.27	3.35	3.39	3.43	3.44	3.45	3.46	3.46	3.48	3.48	3.48
3.08	3.23	3.33	3.36	3.40	3.42	3.44	3.44	3.46	3.48	3.48	3.48
3.06	3.21	3.30	3.35	3.38	3.41	3.42	3.44	3.45	3.47	3.47	3.47
3.03	3.18	3.27	3.33	3.37	3.39	3.41	3.42	3.44	3.47	3.47	3.47
3.01	3.16	3.25	3.31	3.36	3.38	3.40	3.42	3.43	3.47	3.47	3.47
3.00	3.15	3.23	3.30	3.34	3.37	3.39	3.41	3.43	3.47	3.47	3.47
2.98	3.13	3.22	3.28	3.33	3.36	3.38	3.40	3.42	3.47	3.47	3.47
2.97	3.12	3.21	3.27	3.32	3.35	3.37	3.39	3.41	3.47	3.47	3.47
2.96	3.11	3.19	3.26	3.31	3.35	3.37	3.39	3.41	3.47	3.47	3.47
2.95	3.10	3.18	3.25	3.30	3.34	3.36	3.38	3.40	3.47	3.47	3.47
2.89	3.04	3.12	3.20	3.25	3.29	3.32	3.35	3.37	3.47	3.47	3.47
2.86	3.01	3.10	3.17	3.22	3.27	3.30	3.33	3.35	3.47	3.47	3.47
2.83	2.98	3.08	3.14	3.20	3.24	3.28	3.31	3.33	3.47	3.48	3.48
2.80	2.95	3.05	3.12	3.18	3.22	3.26	3.29	3.32	3.47	3.53	3.53
2.77	2.92	3.02	3.09	3.15	3.19	3.23	3.26	3.29	3.47	3.61	3.67

degrees of freedom.