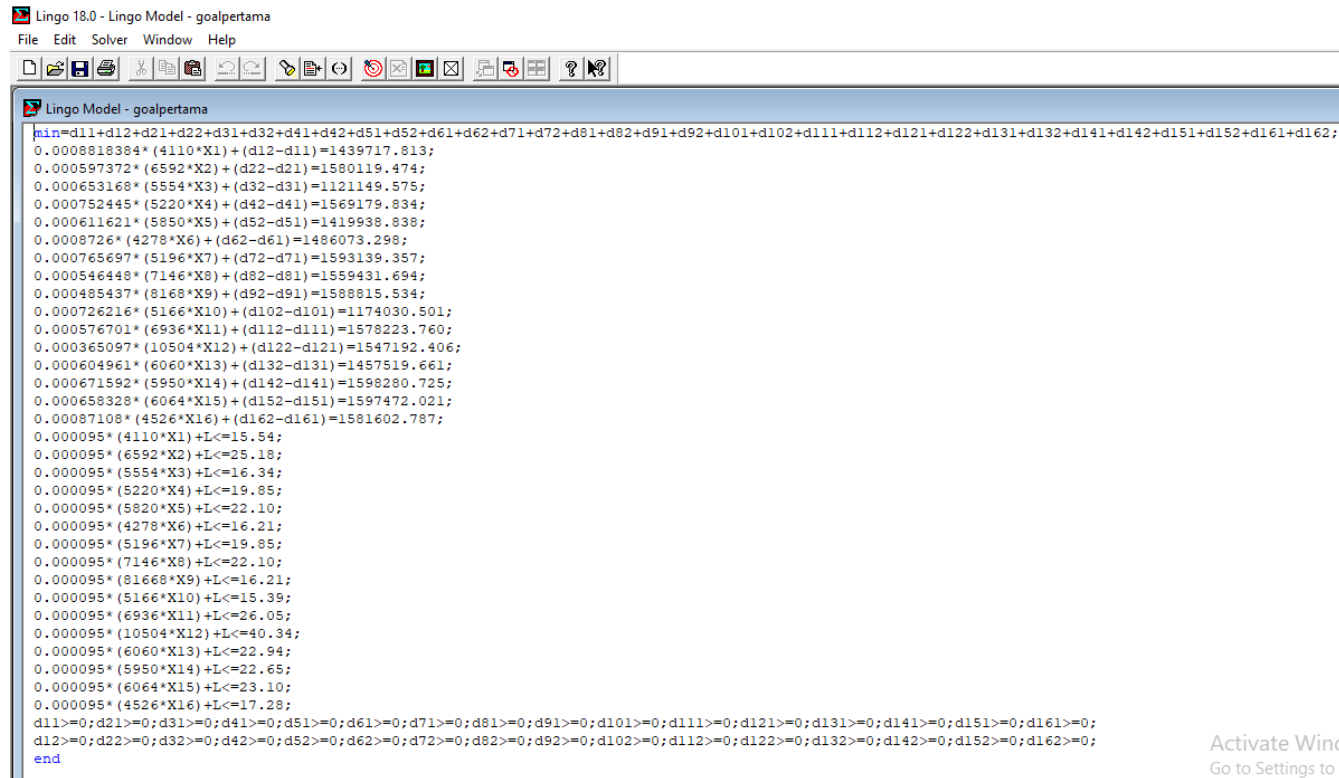


LAMPIRAN

Lampiran 1: Perhitungan *Fuzzy Goal Programming* Menggunakan Lingo 18.0



```
Lingo Model - goalpertama
min=d11+d12+d21+d22+d31+d32+d41+d42+d51+d52+d61+d62+d71+d72+d81+d82+d91+d92+d101+d102+d111+d112+d121+d122+d131+d132+d141+d142+d151+d152+d161+d162;
0.0008818384*(4110*X1)+(d12-d11)=1439717.813;
0.000597372*(6592*X2)+(d22-d21)=1580119.474;
0.000653168*(5554*X3)+(d32-d31)=1121149.575;
0.000752445*(5220*X4)+(d42-d41)=1569179.834;
0.000611621*(5850*X5)+(d52-d51)=1419938.838;
0.0008726*(4278*X6)+(d62-d61)=1486073.298;
0.000765697*(5196*X7)+(d72-d71)=1593139.357;
0.000546448*(7146*X8)+(d82-d81)=1559431.694;
0.000485437*(8168*X9)+(d92-d91)=1588815.534;
0.000726216*(5166*X10)+(d102-d101)=1174030.501;
0.000576701*(6936*X11)+(d112-d111)=1578223.760;
0.000365097*(10504*X12)+(d122-d121)=1547192.406;
0.000604961*(6060*X13)+(d132-d131)=1457519.661;
0.000671592*(5950*X14)+(d142-d141)=1598280.725;
0.000658328*(6064*X15)+(d152-d151)=1597472.021;
0.00087108*(4526*X16)+(d162-d161)=1581602.787;
0.000095*(4110*X1)+L<=15.54;
0.000095*(6592*X2)+L<=25.18;
0.000095*(5554*X3)+L<=16.34;
0.000095*(5220*X4)+L<=19.85;
0.000095*(5820*X5)+L<=22.10;
0.000095*(4278*X6)+L<=16.21;
0.000095*(5196*X7)+L<=19.85;
0.000095*(7146*X8)+L<=22.10;
0.000095*(8168*X9)+L<=16.21;
0.000095*(5166*X10)+L<=15.39;
0.000095*(6936*X11)+L<=26.05;
0.000095*(10504*X12)+L<=40.34;
0.000095*(6060*X13)+L<=22.94;
0.000095*(5950*X14)+L<=22.65;
0.000095*(6064*X15)+L<=23.10;
0.000095*(4526*X16)+L<=17.28;
d11>=0;d21>=0;d31>=0;d41>=0;d51>=0;d61>=0;d71>=0;d81>=0;d91>=0;d101>=0;d111>=0;d121>=0;d131>=0;d141>=0;d151>=0;d161>=0;
d12>=0;d22>=0;d32>=0;d42>=0;d52>=0;d62>=0;d72>=0;d82>=0;d92>=0;d102>=0;d112>=0;d122>=0;d132>=0;d142>=0;d152>=0;d162>=0;
end
```

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Lampiran 1. Skrip Perhitungan FGP Tujuan Pertama

Lingo 18.0 - [Lindo Model - goalpertama]

File Edit Solver Window Help

Global optimal solution found.
 Objective value: 0.2388967E+08
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.08

Model Class: LP

Total variables: 49
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 65
 Nonlinear constraints: 0

Total nonzeros: 144
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	1439574.	0.000000
D21	0.000000	2.000000
D22	1579961.	0.000000
D31	0.000000	2.000000
D32	1121037.	0.000000
D41	0.000000	2.000000
D42	1569023.	0.000000
D51	0.000000	2.000000
D52	1419796.	0.000000
D61	0.000000	2.000000
D62	1485924.	0.000000
D71	0.000000	2.000000
D72	1592979.	0.000000
D81	0.000000	2.000000
D82	1559305.	0.000000
D91	0.000000	2.000000
D92	1588807.	0.000000
D101	0.000000	2.000000
D102	1173913.	0.000000
D111	0.000000	2.000000
D112	1578066.	0.000000
D121	0.000000	2.000000
D122	1547037.	0.000000
D131	0.000000	2.000000
D132	1457374.	0.000000
D141	0.000000	2.000000
D142	1598121.	0.000000
D151	0.000000	2.000000
D152	1597312.	0.000000
D161	0.000000	2.000000
D162	1581444.	0.000000

Lingo 18.0 - [Lindo Model - goalpertama]

File Edit Solver Window Help

Total nonzeros: 144
 Nonlinear nonzeros: 0

Lampiran 2. Output Perhitungan FGP Tujuan Pertama

```

Lingo Model - SMKN2
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000564334*(1772*x1)+(d12-d11)=320000;
0.000564334*(1772*x2)+(d22-d21)=640000;
0.000564334*(1772*x3)+(d32-d31)=320000;
0.000546448*(1830*x4)+(d42-d41)=320000;
0.000546448*(1772*x1)+L<=30.98;
0.000546448*(1772*x2)+L<=61.97;
0.000546448*(1772*x3)+L<=30.98;
0.000546448*(1830*x4)+L<=32;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 3. Skrip Perhitungan FGP Tujuan Kedua SMKN 1

Lingo 18.0 - [SMKN1]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599858.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319986.4	0.000000
X1	32.00003	0.000000
X2	64.00007	0.000000
X3	32.00003	0.000000
X4	13.60163	0.000000
L	0.000000	4.021907

Lampiran 4. Output Perhitungan FGP Tujuan Kedua SMKN 1

```

Lingo Model - SMKN2
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000564334*(1772*x1)+(d12-d11)=320000;
0.000564334*(1772*x2)+(d22-d21)=640000;
0.000564334*(1772*x3)+(d32-d31)=320000;
0.000546448*(1830*x4)+(d42-d41)=320000;
0.000546448*(1772*x1)+L<=30.98;
0.000546448*(1772*x2)+L<=61.97;
0.000546448*(1772*x3)+L<=30.98;
0.000546448*(1830*x4)+L<=32;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 5. Skrip Perhitungan FGP Tujuan Kedua SMKN 2

Lingo 18.0 - [SMKN2]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599840.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	31.99402	0.000000
X2	63.99837	0.000000
X3	31.99402	0.000000
X4	32.00001	0.000000
L	0.000000	4.098194

Lampiran 6. Output Perhitungan FGP Tujuan Kedua SMKN 2

```

Lingo Model - SMKN3
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000485436*(2060*x1)+(d12-d11)=320000;
0.000485436*(2060*x2)+(d22-d21)=640000;
0.000485436*(2060*x3)+(d32-d31)=320000;
0.000503018*(1988*x4)+(d42-d41)=320000;
0.000485436*(2060*x1)+L<=32;
0.000485436*(2060*x2)+L<=64;
0.000485436*(2060*x3)+L<=32;
0.000485436*(2060*x4)+L<=30.88;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 7 . Skrip Perhitungan FGP Tujuan Kedua SMKN 3

Lingo 18.0 - [SMKN3]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599841.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319969.1	0.000000
X1	32.00006	0.000000
X2	64.00012	0.000000
X3	32.00006	0.000000
X4	30.88006	0.000000
L	0.000000	4.000002

Lampiran 8. Output Perhitungan FGP Tujuan Kedua SMKN 3

```

Lingo Model - SMKN4
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000791765*(1263*x1)+(d12-d11)=320000;
0.000791765*(1263*x2)+(d22-d21)=640000;
0.000791765*(1263*x3)+(d32-d31)=320000;
0.000726216*(1377*x4)+(d42-d41)=320000;
0.000726216*(1263*x1)+L<=32;
0.000726216*(1263*x2)+L<=64;
0.000726216*(1263*x3)+L<=32;
0.000726216*(1377*x4)+L<=0;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 9. Skrip Perhitungan FGP Tujuan Kedua SMKN 4

Lingo 18.0 - [SMKN4]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599860.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.08

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319965.1	0.000000
D21	0.000000	2.000000
D22	639930.2	0.000000
D31	0.000000	2.000000
D32	319965.1	0.000000
D41	0.000000	2.000000
D42	320000.0	0.000000
X1	34.88838	0.000000
X2	69.77676	0.000000
X3	34.88838	0.000000
X4	0.000000	0.000000
L	0.000000	4.270783

Lampiran 10. Output Perhitungan FGP Tujuan Kedua SMKN 4

```

Lingo Model - SMKN5
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000576701*(1734*x1)+(d12-d11)=320000;
0.000576701*(1734*x2)+(d22-d21)=640000;
0.000576701*(1734*x3)+(d32-d31)=320000;
0.000618811*(1616*x4)+(d42-d41)=320000;
0.000576701*(1734*x1)+L<=32;
0.000576701*(1734*x2)+L<=64;
0.000576701*(1734*x3)+L<=32;
0.000576701*(1616*x4)+L<=29.82;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 11. Skrip Perhitungan FGP Tujuan Kedua SMKN 5

Lingo 18.0 - [SMKN5]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599840.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	32.00001	0.000000
X2	64.00003	0.000000
X3	32.00001	0.000000
X4	31.99747	0.000000
L	0.000000	4.073019

Lampiran 12. Output Perhitungan FGP Tujuan Kedua SMKN 5

```

Lingo Model - SMKN6
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000365096*(2739*x1)+(d12-d11)=320000;
0.000365096*(2739*x2)+(d22-d21)=640000;
0.000365096*(2739*x3)+(d32-d31)=320000;
0.000437254*(2287*x4)+(d42-d41)=320000;
0.000365096*(2739*x1)+L<=32;
0.000365096*(2739*x2)+L<=64;
0.000365096*(2739*x3)+L<=32;
0.000365096*(2287*x4)+L<=26.72;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 13. Skrip Perhitungan FGP Tujuan Kedua SMKN 6

Lingo 18.0 - [SMKN6]
File Edit Solver Window Help

Global optimal solution found.

Objective value:	1599840.
Infeasibilities:	0.000000
Total solver iterations:	0
Elapsed runtime seconds:	0.06

Model Class: LP

Total variables:	13
Nonlinear variables:	0
Integer variables:	0

Total constraints:	17
Nonlinear constraints:	0

Total nonzeros:	36
Nonlinear nonzeros:	0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	32.00007	0.000000
X2	64.00013	0.000000
X3	32.00007	0.000000
X4	32.00098	0.000000
L	0.000000	4.197641

Lampiran 14. Output Perhitungan FGP Tujuan Kedua SMKN 6


```

Lingo Model - SMKN7
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000680735*(1469*x1)+(d12-d11)=320000;
0.000680735*(1469*x2)+(d22-d21)=640000;
0.000680735*(1469*x3)+(d32-d31)=320000;
0.000604960*(1653*x4)+(d42-d41)=320000;
0.000604960*(1469*x1)+L<=28.44;
0.000604960*(1469*x2)+L<=58.87;
0.000604960*(1469*x3)+L<=28.87;
0.000604960*(1653*x4)+L<=32;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 15. Skrip Perhitungan FGP Tujuan Kedua SMKN 7

Lingo 18.0 - [SMKN7]
File Edit Solver Window Help

Global optimal solution found.
Objective value: 1599837.
Infeasibilities: 0.000000
Total solver iterations: 0
Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
Nonlinear variables: 0
Integer variables: 0

Total constraints: 17
Nonlinear constraints: 0

Total nonzeros: 36
Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639933.8	0.000000
D31	0.000000	2.000000
D32	319967.5	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	32.00230	0.000000
X2	66.24385	0.000000
X3	32.48616	0.000000
X4	32.00004	0.000000
L	0.000000	4.375769

Lampiran 16. Output Perhitungan FGP Tujuan Kedua SMKN 7

```

Lingo Model - SMKN8
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000672494*(1487*x1)+(d12-d11)=320000;
0.000672494*(1487*x2)+(d22-d21)=640000;
0.000672494*(1487*x3)+(d32-d31)=320000;
0.000671591*(1489*x4)+(d42-d41)=320000;
0.000671591*(1487*x1)+L<=31.96;
0.000671591*(1487*x2)+L<=63.91;
0.000671591*(1487*x3)+L<=31.96;
0.000671591*(1489*x4)+L<=32;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 17. Skrip Perhitungan FGP Tujuan Kedua SMKN 8

Lingo 18.0 - [SMKN8]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599840.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	32.00302	0.000000
X2	63.99602	0.000000
X3	32.00302	0.000000
X4	32.00003	0.000000
L	0.000000	4.004034

Lampiran 18. Output Perhitungan FGP Tujuan Kedua SMKN 8

```

Lingo Model - SMKN9
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000658327*(1519*x1)+(d12-d11)=320000;
0.000658327*(1519*x2)+(d22-d21)=640000;
0.000658327*(1519*x3)+(d32-d31)=320000;
0.000663570*(1507*x4)+(d42-d41)=320000;
0.000658327*(1519*x1)+L<=32;
0.000658327*(1519*x2)+L<=64;
0.000658327*(1519*x3)+L<=32;
0.000658327*(1507*x4)+L<=31.75;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 19. Skrip Perhitungan FGP Tujuan Kedua SMKN 9

Lingo 18.0 - [SMKN9]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599840.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.05

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	32.00004	0.000000
X2	64.00008	0.000000
X3	32.00004	0.000000
X4	32.00286	0.000000
L	0.000000	4.007964

Lampiran 20. Output Perhitungan FGP Tujuan Kedua SMKN 9

```

Lingo Model - SMKN10
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.001008064*(992*x1)+(d12-d11)=320000;
0.001008064*(992*x2)+(d22-d21)=640000;
0.001008064*(992*x3)+(d32-d31)=320000;
0.000881834*(1134*x4)+(d42-d41)=320000;
0.000881834*(992*x1)+L<=2798.9417;
0.000881834*(992*x2)+L<=559859.9065;
0.000881834*(992*x3)+L<=2798.9417;
0.000881834*(1134*x4)+L<=320000;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 21. Skrip Perhitungan FGP Tujuan Kedua SMKN 10

Lingo 18.0 - [SMKN10]
File Edit Solver Window Help

Global optimal solution found.
Objective value: 633600.8
Infeasibilities: 0.000000
Total solver iterations: 1
Elapsed runtime seconds: 0.11

Model Class: LP

Total variables: 13
Nonlinear variables: 0
Integer variables: 0

Total constraints: 17
Nonlinear constraints: 0

Total nonzeros: 36
Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	316800.4	0.000000
D21	0.000000	1.000000
D22	0.000000	1.000000
D31	0.000000	2.000000
D32	316800.4	0.000000
D41	0.000000	2.000000
D42	0.000000	0.000000
X1	3199.597	0.000000
X2	640000.3	0.000000
X3	3199.597	0.000000
X4	320000.1	0.000000
L	0.000000	3.286290

Lampiran 22. Output Perhitungan FGP Tujuan Kedua SMKN 10

```

Lingo Model - SMKN11
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000597371*(1674*x1)+(d12-d11)=320000;
0.000597371*(1674*x2)+(d22-d21)=640000;
0.000597371*(1674*x3)+(d32-d31)=320000;
0.000881834*(1570*x4)+(d42-d41)=320000;
0.000597371*(1674*x1)+L<=32;
0.000597371*(1674*x2)+L<=64;
0.000597371*(1674*x3)+L<=32;
0.000597371*(1570*x4)+L<=30.02;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 23. Skrip Perhitungan FGP Tujuan Kedua SMKN 11

```

Lingo 18.0 - [SMKN11]
File Edit Solver Window Help
Global optimal solution found.
Objective value:                1599828.
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.06

Model Class:                    LP

Total variables:                13
Nonlinear variables:            0
Integer variables:              0

Total constraints:              17
Nonlinear constraints:          0

Total nonzeros:                 36
Nonlinear nonzeros:             0

```

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319955.7	0.000000
X1	32.00003	0.000000
X2	64.00006	0.000000
X3	32.00003	0.000000
X4	32.00862	0.000000
L	0.000000	4.476192

Lampiran 24. Output Perhitungan FGP Tujuan Kedua SMKN 11

```

Lingo Model - SMKN12
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000745712*(1341*x1)+(d12-d11)=320000;
0.000745712*(1341*x2)+(d22-d21)=640000;
0.000745712*(1341*x3)+(d32-d31)=320000;
0.000653167*(1531*x4)+(d42-d41)=320000;
0.000653167*(1341*x1)+L<=28.03;
0.000653167*(1341*x2)+L<=56.06;
0.000653167*(1341*x3)+L<=28.03;
0.000653167*(1531*x4)+L<=0;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 25. Skrip Perhitungan FGP Tujuan Kedua SMKN 12

Lingo 18.0 - [SMKN12]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599872.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.05

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	320000.0	0.000000
X1	32.00148	0.000000
X2	64.00296	0.000000
X3	32.00148	0.000000
X4	0.000000	0.000000
L	0.000000	4.425060

Lampiran 26. Output Perhitungan FGP Tujuan Kedua SMKN 12

```

Lingo Model - SMKN13
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000771010*(1297*x1)+(d12-d11)=320000;
0.000771010*(1297*x2)+(d22-d21)=640000;
0.000771010*(1297*x3)+(d32-d31)=320000;
0.000752445*(1329*x4)+(d42-d41)=320000;
0.000752445*(1297*x1)+L<=31.23;
0.000752445*(1297*x2)+L<=62.46;
0.000752445*(1297*x3)+L<=31.23;
0.000752445*(1329*x4)+L<=32;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 27. Skrip Perhitungan FGP Tujuan Kedua SMKN 13

Lingo 18.0 - [SMKN13]
File Edit Solver Window Help

Global optimal solution found.
Objective value: 1599840.
Infeasibilities: 0.000000
Total solver iterations: 0
Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
Nonlinear variables: 0
Integer variables: 0

Total constraints: 17
Nonlinear constraints: 0

Total nonzeros: 36
Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	32.00054	0.000000
X2	64.00107	0.000000
X3	32.00054	0.000000
X4	32.00002	0.000000
L	0.000000	4.074019

Lampiran 28. Output Perhitungan FGP Tujuan Kedua SMKN 13

```

Lingo Model - SMKN14
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000711743*(1405*x1)+(d12-d11)=320000;
0.000711743*(1405*x2)+(d22-d21)=640000;
0.000711743*(1405*x3)+(d32-d31)=320000;
0.000611621*(1635*x4)+(d42-d41)=320000;
0.000711743*(1405*x1)+L<=27.51;
0.000711743*(1405*x2)+L<=54.99;
0.000711743*(1405*x3)+L<=27.51;
0.000711743*(1635*x4)+L<=32;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 29. Skrip Perhitungan FGP Tujuan Kedua SMKN 14

Lingo 18.0 - [SMKN14]
File Edit Solver Window Help

Global optimal solution found.
Objective value: 1599862.
Infeasibilities: 0.000000
Total solver iterations: 0
Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
Nonlinear variables: 0
Integer variables: 0

Total constraints: 17
Nonlinear constraints: 0

Total nonzeros: 36
Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319972.5	0.000000
D21	0.000000	2.000000
D22	639945.0	0.000000
D31	0.000000	2.000000
D32	319972.5	0.000000
D41	0.000000	2.000000
D42	319972.5	0.000000
X1	27.51003	0.000000
X2	54.99006	0.000000
X3	27.51003	0.000000
X4	27.49850	0.000000
L	0.000000	3.859328

Lampiran 30. Output Perhitungan FGP Tujuan Kedua SMKN 14


```

Lingo Model - SMKN15
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000957854*(1044*x1)+(d12-d11)=320000;
0.000957854*(1044*x2)+(d22-d21)=640000;
0.000957854*(1044*x3)+(d32-d31)=320000;
0.000872600*(1146*x4)+(d42-d41)=320000;
0.000872600*(1044*x1)+L<=29.15;
0.000872600*(1044*x2)+L<=58.30;
0.000872600*(1044*x3)+L<=29.15;
0.000872600*(1146*x4)+L<=32;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 31. Skrip Perhitungan FGP Tujuan Kedua SMKN 15

Lingo 18.0 - [SMKN15]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599840.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	31.99800	0.000000
X2	63.99600	0.000000
X3	31.99800	0.000000
X4	32.00001	0.000000
L	0.000000	4.293103

Lampiran 32. Output Perhitungan FGP Tujuan Kedua SMKN 15

```

Lingo Model - SMKN PU
min=d11+d12+d21+d22+d31+d32+d41+d42;
0.000871080*(1148*x1)+(d12-d11)=320000;
0.000871080*(1148*x2)+(d22-d21)=640000;
0.000871080*(1148*x3)+(d32-d31)=320000;
0.000924214*(1082*x4)+(d42-d41)=320000;
0.000871080*(1148*x1)+L<=32;
0.000871080*(1148*x2)+L<=64;
0.000871080*(1148*x3)+L<=32;
0.000871080*(1082*x4)+L<=30.16;
d11>=0;d21>=0;d31>=0;d41>=0;
d12>=0;d22>=0;d32>=0;d42>=0;
end

```

Lampiran 33. Skrip Perhitungan FGP Tujuan Kedua SMKN PU

Lingo 18.0 - [SMKN PU]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 1599840.
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.06

Model Class: LP

Total variables: 13
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 17
 Nonlinear constraints: 0

Total nonzeros: 36
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	319968.0	0.000000
D21	0.000000	2.000000
D22	639936.0	0.000000
D31	0.000000	2.000000
D32	319968.0	0.000000
D41	0.000000	2.000000
D42	319968.0	0.000000
X1	32.00001	0.000000
X2	64.00001	0.000000
X3	32.00001	0.000000
X4	31.99971	0.000000
L	0.000000	4.060998

Lampiran 34. Output Perhitungan FGP Tujuan Kedua SMKN PU

Lampiran 2: Perhitungan *Goal Programming* Menggunakan Lingo 18.0

```

Lingo 18.0 - [Lingo Model - goalpertama]
File Edit Solver Window Help

min=d11+d12+d21+d22+d31+d32+d41+d42+d51+d52+d61+d62+d71+d72+d81+d82+d91+d92+d101+d102+d111+d112+d121+d122+d131+d132+d141+d142+d151+d152+d161+d162;
0.0008818384*(4110*X1)+(d12-d11)=1439717.813;
0.000597372*(6592*X2)+(d22-d21)=1580119.474;
0.000653168*(5554*X3)+(d32-d31)=1121149.575;
0.000752445*(5220*X4)+(d42-d41)=1569179.834;
0.000611621*(5850*X5)+(d52-d51)=1419938.838;
0.0008726*(4278*X6)+(d62-d61)=1486073.298;
0.000765697*(5196*X7)+(d72-d71)=1593139.357;
0.000546448*(7146*X8)+(d82-d81)=1559431.694;
0.000485437*(8168*X9)+(d92-d91)=1588815.534;
0.000726216*(5166*X10)+(d102-d101)=1174030.501;
0.000576701*(6936*X11)+(d112-d111)=1578223.760;
0.000365097*(10504*X12)+(d122-d121)=1547192.406;
0.000604961*(6060*X13)+(d132-d131)=1457519.661;
0.000671592*(5950*X14)+(d142-d141)=1598280.725;
0.000658328*(6064*X15)+(d152-d151)=1597472.021;
0.00087108*(4526*X16)+(d162-d161)=1581602.787;
0.000095*(4110*X1)+L<=15.54;
0.000095*(6592*X2)+L<=25.18;
0.000095*(5554*X3)+L<=16.34;
0.000095*(5220*X4)+L<=19.85;
0.000095*(5820*X5)+L<=22.10;
0.000095*(4278*X6)+L<=16.21;
0.000095*(5196*X7)+L<=19.85;
0.000095*(7146*X8)+L<=22.10;
0.000095*(8168*X9)+L<=16.21;
0.000095*(5166*X10)+L<=15.39;
0.000095*(6936*X11)+L<=26.05;
0.000095*(10504*X12)+L<=40.34;
0.000095*(6060*X13)+L<=22.94;
0.000095*(5950*X14)+L<=22.65;
0.000095*(6064*X15)+L<=23.10;
0.000095*(4526*X16)+L<=17.28;
d11>=0;d21>=0;d31>=0;d41>=0;d51>=0;d61>=0;d71>=0;d81>=0;d91>=0;d101>=0;d111>=0;d121>=0;d131>=0;d141>=0;d151>=0;d161>=0;
d12>=0;d22>=0;d32>=0;d42>=0;d52>=0;d62>=0;d72>=0;d82>=0;d92>=0;d102>=0;d112>=0;d122>=0;d132>=0;d142>=0;d152>=0;d162>=0;
end

```

Activate Win...

Lampiran 35. Skrip Perhitungan GP Tujuan Pertama

Lingo 18.0 - [Lindo Model - goalpertama]
 File Edit Solver Window Help

Global optimal solution found.
 Objective value: 0.2388967E+08
 Infeasibilities: 0.000000
 Total solver iterations: 0
 Elapsed runtime seconds: 0.08

Model Class: LP

Total variables: 49
 Nonlinear variables: 0
 Integer variables: 0

Total constraints: 65
 Nonlinear constraints: 0

Total nonzeros: 144
 Nonlinear nonzeros: 0

Variable	Value	Reduced Cost
D11	0.000000	2.000000
D12	1439574.	0.000000
D21	0.000000	2.000000
D22	1579961.	0.000000
D31	0.000000	2.000000
D32	1121037.	0.000000
D41	0.000000	2.000000
D42	1569023.	0.000000
D51	0.000000	2.000000
D52	1419796.	0.000000
D61	0.000000	2.000000
D62	1485924.	0.000000
D71	0.000000	2.000000
D72	1592979.	0.000000
D81	0.000000	2.000000
D82	1559305.	0.000000
D91	0.000000	2.000000
D92	1588807.	0.000000

Lingo 18.0 - [Lindo Model - goalpertama]
 File Edit Solver Window Help

D101	0.000000	2.000000
D102	1173913.	0.000000
D111	0.000000	2.000000
D112	1578066.	0.000000
D121	0.000000	2.000000
D122	1547037.	0.000000
D131	0.000000	2.000000
D132	1457374.	0.000000
D141	0.000000	2.000000
D142	1598121.	0.000000
D151	0.000000	2.000000
D152	1597312.	0.000000
D161	0.000000	2.000000
D162	1581444.	0.000000
X1	39.80023	0.000000
X2	40.20823	0.000000
X3	30.96867	0.000000
X4	40.02823	0.000000
X5	39.97106	0.000000
X6	39.88583	0.000000
X7	40.21312	0.000000
X8	32.55410	0.000000
X9	2.089332	0.000000
X10	31.35889	0.000000
X11	39.53439	0.000000
X12	40.42570	0.000000
X13	39.84714	0.000000
X14	40.07077	0.000000
X15	40.09860	0.000000
X16	40.18885	0.000000
L	0.000000	107.4407

Lampiran 36. Output Perhitungan GP Tujuan Pertama

Lingo 18.0 - Lingo Model - GP SMKN 1

File Edit Solver Window Help

Lingo Model - GP SMKN 1

```

min=d11+d21+d31+d41;
(1306*x1)+(d11)=417920000;
(1306*x2)+(d21)=835840000;
(1306*x3)+(d31)=417920000;
(1278*x4)+(d41)=408960000;
(1306*x1)+d11<=417920000;
(1306*x2)+d21<=835840000;
(1306*x3)+d31<=417920000;
(1278*x4)+d41<=408960000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 37. Skrip Perhitungan GP Tujuan Kedua SMKN 1

Lingo 18.0 - [GP SMKN 1]

File Edit Solver Window Help

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.08

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 38. Output Perhitungan GP Tujuan Kedua SMKN 1

```

min=d11+d21+d31+d41;
(1772*x1)+(d11)=567040000;
(1772*x2)+(d21)=1134080000;
(1772*x3)+(d31)=567040000;
(1830*x4)+(d41)=585600000;
(1772*x1)+d11<=567040000;
(1772*x2)+d21<=1134080000;
(1772*x3)+d31<=567040000;
(1830*x4)+d41<=585600000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 39. Skrip Perhitungan GP Tujuan Kedua SMKN 2

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.08

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 40. Output Perhitungan GP Tujuan Kedua SMKN 2

Lingo 18.0 - Lingo Model - GP SMKN 3

File Edit Solver Window Help

Lingo Model - GP SMKN 3

```

min=d11+d21+d31+d41;
(2060*x1)+(d11)=659200000;
(2060*x2)+(d21)=1318400000;
(2060*x3)+(d31)=659200000;
(1988*x4)+(d41)=636160000;
(2060*x1)+d11<=659200000;
(2060*x2)+d21<=1318400000;
(2060*x3)+d31<=659200000;
(1988*x4)+d41<=636160000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 41. Skrip Perhitungan GP Tujuan Kedua SMKN 3

Lingo 18.0 - [GP SMKN 3]

File Edit Solver Window Help

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.15

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 42. Output Perhitungan GP Tujuan Kedua SMKN 3

```

min=d11+d21+d31+d41;
(1263*x1)+(d11)=404160000;
(1263*x2)+(d21)=808320000;
(1263*x3)+(d31)=404160000;
(1377*x4)+(d41)=0;
(1263*x1)+d11<=404160000;
(1263*x2)+d21<=808320000;
(1263*x3)+d31<=404160000;
(1377*x4)+d41<=0;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 43. Skrip Perhitungan GP Tujuan Kedua SMKN 4

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.08

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	0.000000	0.000000

Lampiran 44. Output Perhitungan GP Tujuan Kedua SMKN 4


```

min=d11+d21+d31+d41;
(1734*x1)+(d11)=554880000;
(1734*x2)+(d21)=1109760000;
(1734*x3)+(d31)=554880000;
(1616*x4)+(d41)=517120000;
(1734*x1)+d11<=554880000;
(1734*x2)+d21<=1109760000;
(1734*x3)+d31<=554880000;
(1616*x4)+d41<=517120000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 45. Skrip Perhitungan GP Tujuan Kedua SMKN 5

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.12

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

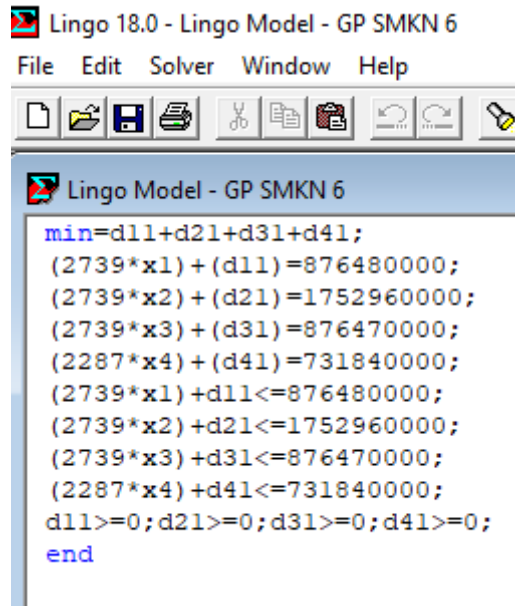
Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                 24
Nonlinear nonzeros:            0

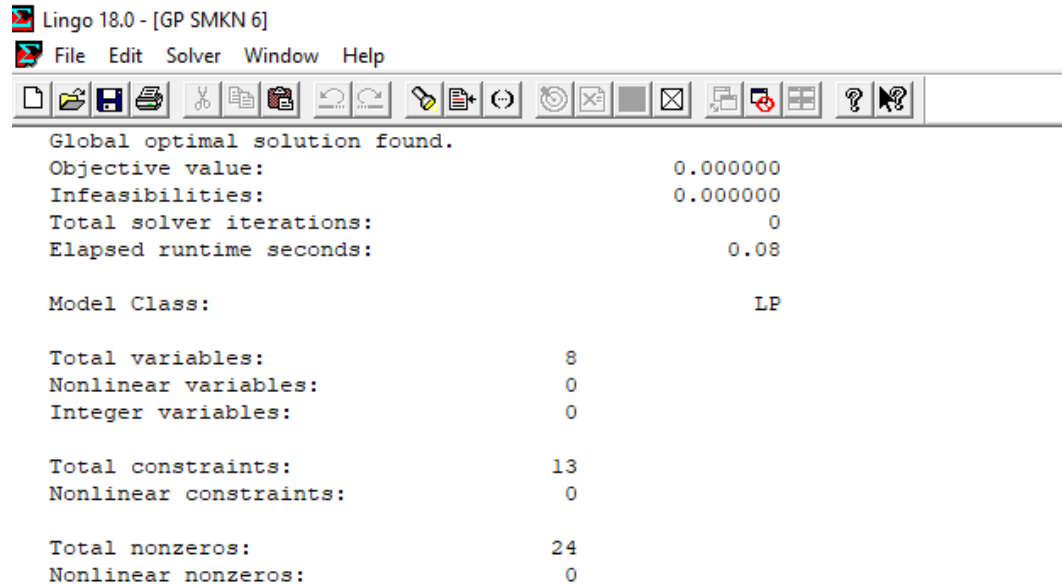
```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 46. Output Perhitungan GP Tujuan Kedua SMKN 5



Lampiran 47. Skrip Perhitungan GP Tujuan Kedua SMKN 6



Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	319996.3	0.000000
X4	320000.0	0.000000

Lampiran 48. Output Perhitungan GP Tujuan Kedua SMKN 6

```

min=d11+d21+d31+d41;
(1469*x1)+(d11)=470070000;
(1469*x2)+(d21)=940160000;
(1469*x3)+(d31)=470080000;
(1653*x4)+(d41)=528960000;
(1469*x1)+d11<=470070000;
(1469*x2)+d21<=940160000;
(1469*x3)+d31<=470080000;
(1653*x4)+d41<=528960000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 49. Skrip Perhitungan GP Tujuan Kedua SMKN 7

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.09

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	319993.2	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 50. Output Perhitungan GP Tujuan Kedua SMKN 7

Lingo 18.0 - Lingo Model - GP SMKN 8

File Edit Solver Window Help

```

min=d11+d21+d31+d41;
(1487*x1)+(d11)=475840000;
(1487*x2)+(d21)=951680000;
(1487*x3)+(d31)=475850000;
(1489*x4)+(d41)=476480000;
(1487*x1)+d11<=475840000;
(1487*x2)+d21<=951680000;
(1487*x3)+d31<=475850000;
(1489*x4)+d41<=476480000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 51. Skrip Perhitungan GP Tujuan Kedua SMKN 8

Lingo 18.0 - [GP SMKN 8]

File Edit Solver Window Help

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.06

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

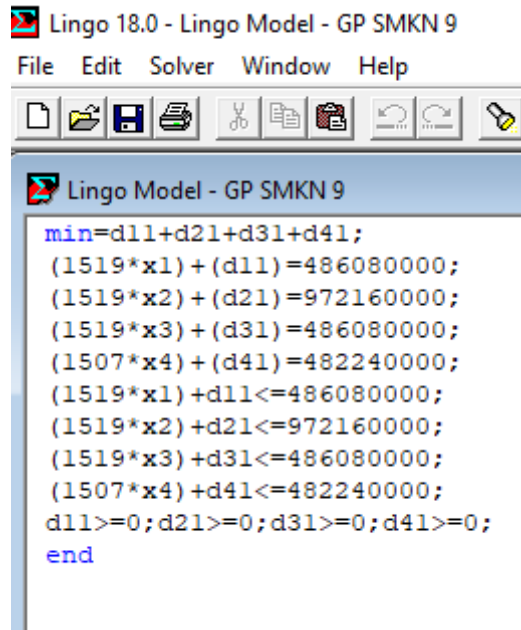
Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

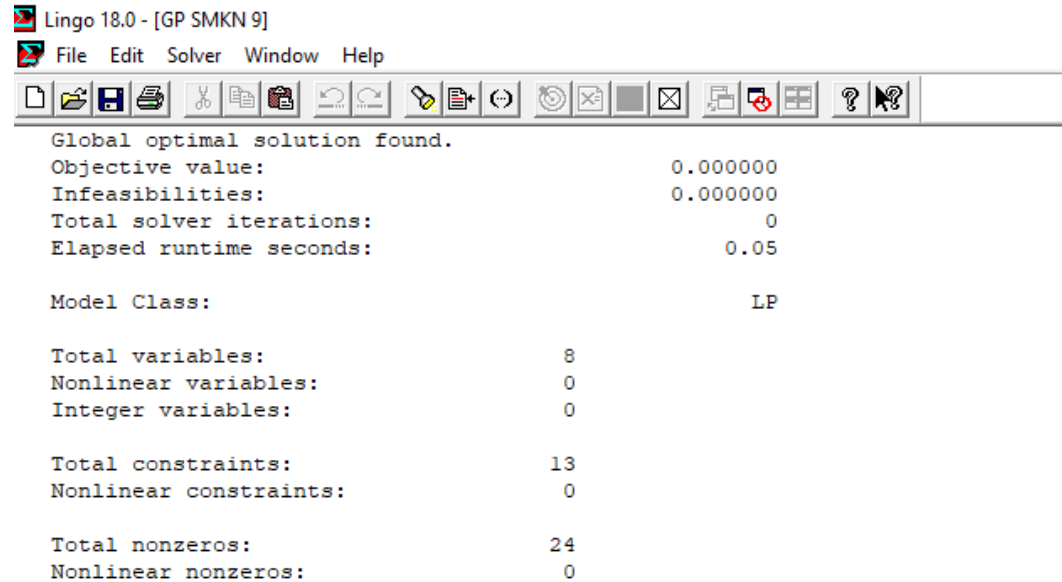
```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320006.7	0.000000
X4	320000.0	0.000000

Lampiran 52. Output Perhitungan GP Tujuan Kedua SMKN 8



Lampiran 53. Skrip Perhitungan GP Tujuan Kedua SMKN 9



Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 54. Output Perhitungan GP Tujuan Kedua SMKN 9

Lingo 18.0 - Lingo Model - GP SMKN 10

File Edit Solver Window Help

Lingo Model - GP SMKN 10

```

min=d11+d21+d31+d41;
(992*x1)+(d11)=317440000;
(992*x2)+(d21)=634880000;
(992*x3)+(d31)=31740000;
(1134*x4)+(d41)=362880000;
(992*x1)+d11<=317440000;
(992*x2)+d21<=634880000;
(992*x3)+d31<=31740000;
(1134*x4)+d41<=362880000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 55. Skrip Perhitungan GP Tujuan Kedua SMKN 10

Lingo 18.0 - [GP SMKN 10]

File Edit Solver Window Help

Global optimal solution found.

Objective value:	0.000000
Infeasibilities:	0.000000
Total solver iterations:	0
Elapsed runtime seconds:	0.25

Model Class: LP

Total variables:	8
Nonlinear variables:	0
Integer variables:	0

Total constraints:	13
Nonlinear constraints:	0

Total nonzeros:	24
Nonlinear nonzeros:	0

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	31995.97	0.000000
X4	320000.0	0.000000

Lampiran 56. Output Perhitungan GP Tujuan Kedua SMKN 10

```

min=d11+d21+d31+d41;
(1674*x1)+(d11)=535680000;
(1674*x2)+(d21)=1071360000;
(1674*x3)+(d31)=535680000;
(1570*x4)+(d41)=502400000;
(1674*x1)+d11<=535680000;
(1674*x2)+d21<=1071360000;
(1674*x3)+d31<=535680000;
(1570*x4)+d41<=502400000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 57. Skrip Perhitungan GP Tujuan Kedua SMKN 11

Global optimal solution found.

Objective value:	0.000000
Infeasibilities:	0.000000
Total solver iterations:	0
Elapsed runtime seconds:	0.08

Model Class: LP

Total variables:	8
Nonlinear variables:	0
Integer variables:	0
Total constraints:	13
Nonlinear constraints:	0
Total nonzeros:	24
Nonlinear nonzeros:	0

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 58. Output Perhitungan GP Tujuan Kedua SMKN 11

Lingo 18.0 - Lingo Model - GP SMKN 12

File Edit Solver Window Help

```

min=d11+d21+d31+d41;
(1341*x1)+(d11)=429120000;
(1341*x2)+(d21)=858240000;
(1341*x3)+(d31)=429120000;
(1531*x4)+(d41)=0;
(1341*x1)+d11<=429120000;
(1341*x2)+d21<=85240000;
(1341*x3)+d31<=429120000;
(1531*x4)+d41<=0;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 59. Skrip Perhitungan GP Tujuan Kedua SMKN 12

Lingo 18.0 - [GP SMKN 12]

File Edit Solver Window Help

```

No feasible solution found.
Infeasibilities:                0.7730000E+09
Total solver iterations:        3
Elapsed runtime seconds:        2.40

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	0.000000	0.000000

Lampiran 60. Output Perhitungan GP Tujuan Kedua SMKN 12

Lingo 18.0 - Lingo Model - GP SMKN 13

File Edit Solver Window Help

```

min=d11+d21+d31+d41;
(1297*x1)+(d11)=415040000;
(1297*x2)+(d21)=830080000;
(1297*x3)+(d31)=415040000;
(1329*x4)+(d41)=425280000;
(1297*x1)+d11<=415040000;
(1297*x2)+d21<=830080000;
(1297*x3)+d31<=415040000;
(1329*x4)+d41<=425280000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 61. Skrip Perhitungan GP Tujuan Kedua SMKN 13

Lingo 18.0 - [GP SMKN 13]

File Edit Solver Window Help

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.08

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lingo 18.0 - Lingo Model - GP SMKN 14

File Edit Solver Window Help

```

min=d11+d21+d31+d41;
(1405*x1)+(d11)=449600000;
(1405*x2)+(d21)=899200000;
(1405*x3)+(d31)=449600000;
(1635*x4)+(d41)=523200000;
(1405*x1)+d11<=449600000;
(1405*x2)+d21<=899200000;
(1405*x3)+d31<=449600000;
(1635*x4)+d41<=523200000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 63. Skrip Perhitungan GP Tujuan Kedua SMKN 14

Lingo 18.0 - [GP SMKN 14]

File Edit Solver Window Help

```

Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.09

Model Class:                    LP

Total variables:                8
Nonlinear variables:            0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 64. Output Perhitungan GP Tujuan Kedua SMKN 14

Lingo 18.0 - Lingo Model - GP SMKN 15

File Edit Solver Window Help

```

min=d11+d21+d31+d41;
(1044*x1)+(d11)=334080000;
(1044*x2)+(d21)=668160000;
(1044*x3)+(d31)=334080000;
(1146*x4)+(d41)=366720000;
(1044*x1)+d11<=334080000;
(1044*x2)+d21<=668160000;
(1044*x3)+d31<=334080000;
(1146*x4)+d41<=366720000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 65. Skrip Perhitungan GP Tujuan Kedua SMKN 15

Lingo 18.0 - [GP SMKN 15]

File Edit Solver Window Help

Global optimal solution found.

Objective value:	0.000000
Infeasibilities:	0.000000
Total solver iterations:	0
Elapsed runtime seconds:	0.09

Model Class: LP

Total variables:	8
Nonlinear variables:	0
Integer variables:	0

Total constraints:	13
Nonlinear constraints:	0

Total nonzeros:	24
Nonlinear nonzeros:	0

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	640000.0	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 66. Output Perhitungan GP Tujuan Kedua SMKN 15

```

Lingo Model - GP SMKN PU
File Edit Solver Window Help
min=d11+d21+d31+d41;
(1148*x1)+(d11)=367360000;
(1148*x2)+(d21)=734710000;
(1148*x3)+(d31)=367360000;
(1082*x4)+(d41)=346240000;
(1148*x1)+d11<=367360000;
(1148*x2)+d21<=734710000;
(1148*x3)+d31<=367360000;
(1082*x4)+d41<=346240000;
d11>=0;d21>=0;d31>=0;d41>=0;
end

```

Lampiran 67. Skrip Perhitungan GP Tujuan Kedua SMKN PU

```

Lingo 18.0 - [GP SMKN PU]
File Edit Solver Window Help
Global optimal solution found.
Objective value:                0.000000
Infeasibilities:                0.000000
Total solver iterations:        0
Elapsed runtime seconds:        0.08

Model Class:                    LP

Total variables:                8
Nonlinear variables:           0
Integer variables:              0

Total constraints:              13
Nonlinear constraints:          0

Total nonzeros:                24
Nonlinear nonzeros:            0

```

Variable	Value	Reduced Cost
D11	0.000000	1.000000
D21	0.000000	1.000000
D31	0.000000	1.000000
D41	0.000000	1.000000
X1	320000.0	0.000000
X2	639991.3	0.000000
X3	320000.0	0.000000
X4	320000.0	0.000000

Lampiran 68. Output Perhitungan GP Tujuan Kedua SMKN PU