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What's new

1. PERT and CPM Network diagram (improved) on 26.08.19

1. BCD Addition on 22.08.19

2. BCD Subtraction using 9's complement

3. BCD Subtraction using 10's complement

4. Excess 3 Addition

5. Excess 3 Subtraction using 9's complement

6. Excess 3 Subtraction using 10's complement

2. Conversion on 22.08.19

1. Decimal To BCD

2. BCD To Decimal

3. Decimal To Excess 3

4. Excess 3 To Decimal

5. Decimal To Gray code

6. Gray code To Decimal

3. Logarithmic equations 07.08.19

Topics

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Home > Operation Research calculators > Primal to dual conversion calculator

** check different types of Primal to dual conversion examples

Algorithm and examples NEW

Method

6. Primal to Dual

Solve the Linear programming problem using Primal to dual conversion calculator

Type your linear programming problem

x13 <= 1

x14 <= 1

x23 <= 1

x24 <= 1

x34 <= 1

and x12,x13,x14,x23,x24,x34 >= 0

OR

Total Variables : 6

Total Constraints : 10

Generate

Min z = 12x12 + 13x13 + 14x14 + 23x23 + 24x24 + 34x34

Subject to constraints

1x12 + 1x13 + 1x14 + 0x23 + 0x24 + 0x34 = 12

1x12 + 0x13 + 0x14 + 1x23 + 1x24 + 0x34 = 13

0x12 + 1x13 + 0x14 + 1x23 + 0x24 + 1x34 = 14

0x12 + 0x13 + 1x14 + 0x23 + 1x24 + 1x34 = 23

1x12 + 0x13 + 0x14 + 0x23 + 0x24 + 0x34 <= 1

0x12 + 1x13 + 0x14 + 0x23 + 0x24 + 0x34 <= 1

0x12 + 0x13 + 1x14 + 0x23 + 0x24 + 0x34 <= 1

0x12 + 0x13 + 0x14 + 1x23 + 0x24 + 0x34 <= 1

0x12 + 0x13 + 0x14 + 0x23 + 1x24 + 0x34 <= 1

0x12 + 0x13 + 0x14 + 0x23 + 0x24 + 1x34 <= 1

and x12,x13,x14,x23,x24,x34 >= 0 and unrestricted in sign x12, x13, x14, x23, x24, x34

Mode : Auto

FindRandomNew

Solution Help

Solution

Find dual from primal conversion

MIN z = 12x12 + 13x13 + 14x14 + 23x23 + 24x24 + 34x34

subject to

x12 + x13 + x14 = 1

x12 + x23 + x24 = 1

x13 + x23 + x34 = 1

x14 + x24 + x34 = 1

x12 <= 1

x13 <= 1

x14 <= 1

x23 <= 1

x24 <= 1

x34 <= 1

and x12,x13,x14,x23,x24,x34 >= 0

(Answer Only)

Solution:

Dual is (Solution stpes of Dual by BigM method)

MAX zy = y1 + y2 + y3 + y4 - y5 - y6 - y7 - y8 - y9 - y10

subject to

y1 + y2 - y5 ≤ 12

y1 + y3 - y6 ≤ 13

y1 + y4 - y7 ≤ 14

y2 + y3 - y8 ≤ 23

y2 + y4 - y9 ≤ 24

y3 + y4 - y10 ≤ 34

and y1,y2,y3,y4,y5,y6,y7,y8,y9,y10 unrestricted in sign

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