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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

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Test

** check different types of Primal to dual conversion calculator Algorithm

Method 6. Primal to Dual

Solve the Linear programming problem using Primal to dual conversion calculator

Type your linear programming problem

x32 <= 1

x34 <= 1

x41 <= 1

x42 <= 1

x43 <= 1

and x12,x13,x14,x21,x23,x24,x31,x32,x34,x41,x42,x43 >= 0

OR

Total Variables : 12

Total Constraints : 16

Generate

Min z = 12x12 + 13x13 + 14x14 + 21x21 + 23x23 + 24x24 + 31x31 + 32x32 + 34x34 + 41x41 + 42x42 + 43x43

Subject to constraints

0

x12 + 0

x13 + 0

x14 + 1

x21 + 0

x23 + 0

x24 + 1

x31 + 0

x32 + 0

x34 + 1

x41 + 0

x42 + 0

x43 + 0

1

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 1

x32 + 0

x34 + 0

x41 + 1

x42 + 0

x43 + 0

0

x12 + 1

x13 + 0

x14 + 0

x21 + 1

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 1

x14 + 0

x21 + 0

x23 + 1

x24 + 0

x31 + 0

x32 + 1

x34 + 0

x41 + 0

x42 + 0

x43 + 0

1

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 1

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 1

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 1

x21 + 0

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 0

x21 + 1

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 1

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 1

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 1

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 0

x32 + 1

x34 + 0

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 1

x41 + 0

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 1

x42 + 0

x43 + 0

0

x12 + 0

x13 + 0

x14 + 0

x21 + 0

x23 + 0

x24 + 0

x31 + 0

x32 + 0

x34 + 0

x41 + 0

x42 + 0

x43 + 0

and x12,x13,x14,x21,x23,x24,x31,x32,x34,x41,x42,x43 >= 0 and unrestricted in sign x12, x13, x14, x21, x23, x24, x31, x32, x34, x41, x42, x43

Mode : Auto

Find Random New

Solution Help

Solution

Find dual from primal conversion

MIN z = 12x12 + 13x13 + 14x14 + 21x21 + 23x23 + 24x24 + 31x31 + 32x32 + 34x34 + 41x41 + 42x42 + 43x43

subject to

x21 + x31 + x41 = 1

x12 + x32 + x42 = 1

x13 + x23 + x43 = 1

x14 + x24 + x34 = 1

x12 <= 1

x13 <= 1

x14 <= 1

x21 <= 1

x23 <= 1

x24 <= 1

x31 <= 1

x32 <= 1

x34 <= 1

x41 <= 1

x42 <= 1

x43 <= 1

and x12,x13,x14,x21,x23,x24,x31,x32,x34,x41,x42,x43 >= 0

(Answer Only)

Dual is (Solution stpes of Dual by BigM method)

MAX $z_y = y_1 + y_2 + y_3 + y_4 - y_5 - y_6 - y_7 - y_8 - y_9 - y_{10} - y_{11} - y_{12} - y_{13} - y_{14} - y_{15} - y_{16}$

subject to

$$\begin{aligned} y_2 - y_5 &\leq 12 \\ y_3 - y_6 &\leq 13 \\ y_4 - y_7 &\leq 14 \\ y_1 - y_8 &\leq 21 \\ y_3 - y_9 &\leq 23 \\ y_4 - y_{10} &\leq 24 \\ y_1 - y_{11} &\leq 31 \\ y_2 - y_{12} &\leq 32 \\ y_4 - y_{13} &\leq 34 \\ y_1 - y_{14} &\leq 41 \\ y_2 - y_{15} &\leq 42 \\ y_3 - y_{16} &\leq 43 \end{aligned}$$

and $y_5, y_6, y_7, y_8, y_9, y_{10}, y_{11}, y_{12}, y_{13}, y_{14}, y_{15}, y_{16} \geq 0$; y_1, y_2, y_3, y_4 unrestricted in sign

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