# GRAPH THEORY

Submitted by

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22pmc108

# Temporary-Ordered Routing Algorithm (**TORA**)

## 1.Linear programming graphical solution .

## 2. **Linear programming simplex method.**

**LINEAR PROGRAMMING**

**Problem Title:** lpp
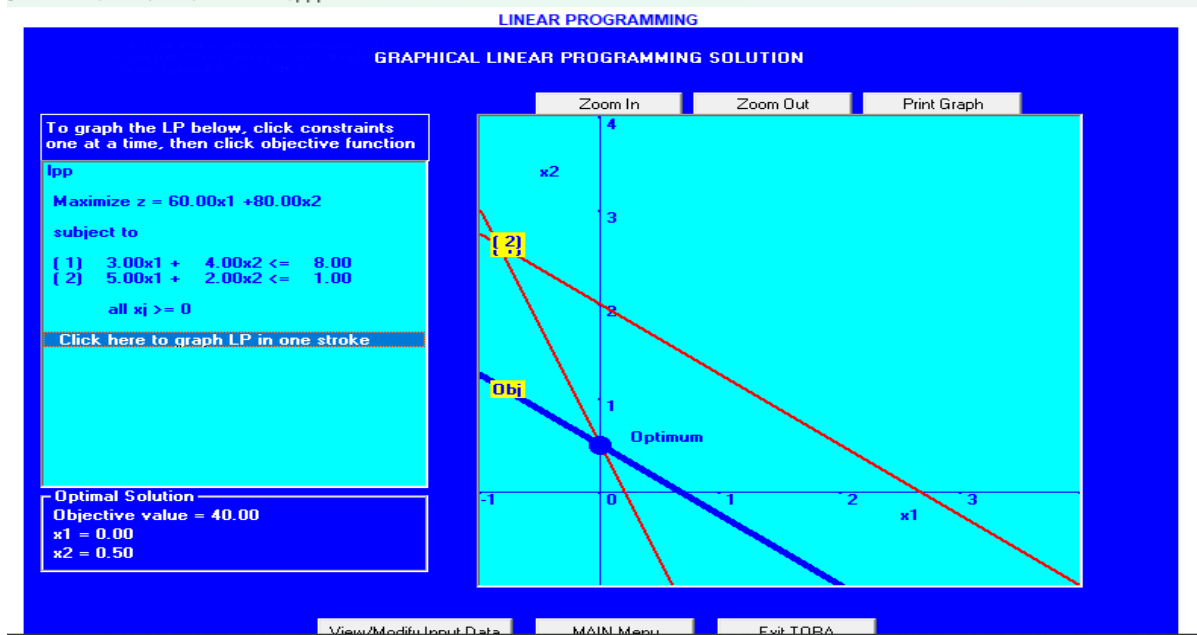
**Nbr. of Variables:** 2

**No. of Constraints:** 4

**Editing Grid:**
>>Click Maximize(Minimize)-cell to change it to Minimize(Maximize)
>>To DELETE, INSERT, COPY, or PASTE a column(row), click heading cell of target column(row), then invoke pull-down EditGrid menu
>>For INSERT mode, a single(double) click of target row/column will place new row/column after(before) target row/column.

**INPUT GRID - LINEAR PROGRAMMING**

|  | x1 | x2 | Enter <, >, or = | R.H.S. |
|---|---|---|---|---|
| Var. Name | X1 | X2 | | |
| Maximize | 5.00 | 4.00 | | |
| Constr 1 | 6.00 | 4.00 | <= | 24.00 |
| Constr 2 | 1.00 | 2.00 | <= | 6.00 |
| Constr 3 | 1.00 | 1.00 | <= | 1.00 |
| Constr 4 | 0.00 | 1.00 | <= | 1 |
| Lower Bound | 0.00 | 0.00 | | |
| Upper Bound | infinity | infinity | | |
| Unrestr'd (y/n)? | n | n | | |

**LINEAR PROGRAMMING**

**LINEAR PROGRAMMING OUTPUT SUMMARY**

**Title: lpp**
**Final Iteration No.:  2**
**Objective Value (Max) =5.00**

Next Iteration | All Iterations | Write to Printer

| Variable | Value | Obj Coeff | Obj Val Contrib |
|---|---|---|---|
| x1:  X1 | 1.00 | 5.00 | 5.00 |
| x2:  X2 | 0.00 | 4.00 | 0.00 |

| Constraint | RHS | Slack-/Surplus+ | |
|---|---|---|---|
| 1 (<) | 24.00 | 18.00- | |
| 2 (<) | 6.00 | 5.00- | |
| 3 (<) | 1.00 | 0.00 | |
| 4 (<) | 1.00 | 1.00- | |

**\*\*\*Sensitivity Analysis\*\*\***

| Variable | Current Obj Coeff | Min Obj Coeff | Max Obj Coeff | Reduced Cost |
|---|---|---|---|---|
| x1:  X1 | 5.00 | 4.00 | infinity | 0.00 |
| x2:  X2 | 4.00 | -infinity | 5.00 | 1.00 |

| Constraint | Current RHS | Min RHS | Max RHS | Dual Price |
|---|---|---|---|---|
| 1 (<) | 24.00 | 6.00 | infinity | 0.00 |
| 2 (<) | 6.00 | 1.00 | infinity | 0.00 |

View/Modify Input Data | MAIN Menu | Exit TORA

## LINEAR PROGRAMMING

### SIMPLEX TABLEAU - (Starting All-Slack Method)

**Title: Ipp (Maximize)**

**Steps for generating NEXT tableau from CURRENT one:**
1. ENTERING variable: Click a NONBASIC variable (if correct, column turns green)
2. LEAVING variable: Click a BASIC variable (if correct, row turns red)
3. Click command button NEXT ITERATION (or ALL ITERATIONS) -- This step may be executed without Steps 1 and/or 2.

[ Next Iteration ]   [ All Iterations ]   [ Write to Printer ]

| Iteration 1 | X1 | X2 | | | | | |
|---|---|---|---|---|---|---|---|
| Basic | x1 | x2 | sx3 | sx4 | sx5 | Rx6 | Solution |
| z (max) | -5.00 | -104.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| sx3 | 6.00 | 4.00 | 1.00 | 0.00 | 0.00 | 0.00 | 24.00 |
| sx4 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 6.00 |
| sx5 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Rx6 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| Lower Bound | 0.00 | 0.00 | | | | | |
| Upper Bound | 0.00 | 0.00 | | | | | |
| Unrestr'd (y/n)? | n | n | | | | | |

[ View/Modify Input Data ]   [ MAIN Menu ]   [ Exit TORA ]

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## LINEAR PROGRAMMING

### SIMPLEX TABLEAU - (Starting All-Slack Method)

**Title: Ipp (Maximize)**

**Steps for generating NEXT tableau from CURRENT one:**
1. ENTERING variable: Click a NONBASIC variable (if correct, column turns green)
2. LEAVING variable: Click a BASIC variable (if correct, row turns red)
3. Click command button NEXT ITERATION (or ALL ITERATIONS) -- This step may be executed without Steps 1 and/or 2.

[ Next Iteration ]   [ All Iterations ]   [ Write to Printer ]

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| sx5 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Rx6 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| Lower Bound | 0.00 | 0 | | | | | |
| Upper Bound | 0.00 | 0 | | | | | |
| Unrestr'd (y/n)? | n | | | | | | |

**Optimal Tableau** ×

ℹ Iteration 3 is optimal

[ OK ]

| Iteration 2 | X1 | X2 | | | sx5 | Rx6 | Solution |
|---|---|---|---|---|---|---|---|
| Basic | x1 | | | | | | |
| z (max) | -5.00 | 0 | | | 0.00 | 104.00 | 0.00 |
| sx3 | 6.00 | 0 | | | 0.00 | -4.00 | 24.00 |
| sx4 | 1.00 | 0 | | | 0.00 | -2.00 | 6.00 |
| sx5 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | -1.00 | 1.00 |
| x2 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| Lower Bound | 0.00 | 0.00 | | | | | |
| Upper Bound | 0.00 | 0.00 | | | | | |
| Unrestr'd (y/n)? | n | n | | | | | |

| Iteration 3 | X1 | X2 | | | | | |
|---|---|---|---|---|---|---|---|

[ View/Modify Input Data ]   [ MAIN Menu ]   [ Exit TORA ]

## 3. Linear programming transportation method.

File   EditGrid

**TRANSPORTATION MODEL**

| Problem Title: | transportation |
| No. of Sources | 4 |
| No. of Dest'ns | 4 |

**Editing Grid:**
>>To DELETE, INSERT, COPY, or PASTE a column(row), click heading cell of target column(row), then invoke pull-down EditGrid menu
>>For INSERT mode, a single(double) click of target row/column will place new row/column after(before) target row/column.

**INPUT GRID - TRANSPORTATION**

| | S/D Name | D1 | D2 | D3 | D4 | Supply |
|---|---|---|---|---|---|---|
| S1 | | 19.00 | 30.00 | 50.00 | 10.00 | 12 |
| S2 | | 40.00 | 54.00 | 18.00 | 60.00 | 17 |
| S3 | | 65.00 | 28.00 | 44.00 | 20.00 | 20 |
| S4 | | 78.00 | 47.00 | 72.00 | 80.00 | 11 |
| Demand | | 14 | 18 | 20 | 8 | |

## 1. North west corner method

**TRANSPORTATION MODEL**

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**TRANSPORTATION TABLEAU - (North-West Corner Method)**
Title: transportation --(minimum cost)
Steps for generating transportation tableaus:
  1. (Optional step) Initialize ONE of the simplex multiplier ($u_1$, $u_2$, ..., $v_1$, $v_2$ ...) to zero value (default $u_1 = 0$)
  2. Click (in any order) the cells defining the change-of-basis loop (if corret, cell changes color)
  3. Click command button NEXT ITERATION (or ALL ITERATIONS) -- This step may be executed without Step 2

— Initialize u or v —
u1=0

Next Iteration   All Iterations   Write to Printer

| Iter 1 | ObjVal = 2806.00 | | D1 | D2 | D3 | D4 | Supply |
|---|---|---|---|---|---|---|---|
| | Name | | | | | | |
| | | | v1=19.00 | v2=33.00 | v3=49.00 | v4=57.00 | |
| | | | 19.00 | 30.00 | 50.00 | 10.00 | |
| S1 | | u1=0.00 | **12** | | | | **12** |
| | | | 0.00 | 3.00 | -1.00 | 47.00 | |
| | | | 40.00 | 54.00 | 18.00 | 60.00 | |
| S2 | | u2=21.00 | **2** | **15** | | | **17** |
| | | | 0.00 | 0.00 | 52.00 | 18.00 | |
| | | | 65.00 | 28.00 | 44.00 | 20.00 | |
| S3 | | u3=-5.00 | | **3** | **17** | | **20** |
| | | | -51.00 | 0.00 | 0.00 | 32.00 | |
| | | | 78.00 | 47.00 | 72.00 | 80.00 | |
| S4 | | u4=23.00 | | | **3** | **8** | **11** |
| | | | -36.00 | 9.00 | 0.00 | 0.00 | |

View/Modify Input Data   MAIN Menu   Exit TORA

## 2.Least cost method

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**TRANSPORTATION TABLEAU - (Least Cost Method)**

Title: transportation --(minimum cost)

Steps for generating transportation tableaus:
1. (Optional step) Initialize ONE of the simplex multiplier (u1, u2, ..., v1, v2 ...) to zero value (default u1 = 0)
2. Click (in any order) the cells defining the change-of-basis loop (if corret, cell changes color)
3. Click command button NEXT ITERATION (or ALL ITERATIONS) -- This step may be executed without Step 2

Initialize u or v
[ u1=0 ▼ ]

[ Next Iteration ] [ All Iterations ] [ Write to Printer ]

| Iter 1 | ObjVal = 1906.00 | | D1 | D2 | D3 | D4 | Supply |
|--------|---------|---|----|----|----|----|--------|
| | Name | | v1=19.00 | v2=-3.00 | v3=13.00 | v4=10.00 | |
| S1 | | u1=0.00 | 19.00 | 30.00 | 50.00 | 10.00 | 12 |
| | | | **4** | | | **8** | |
| | | | 0.00 | -33.00 | -37.00 | 0.00 | |
| S2 | | u2=5.00 | 40.00 | 54.00 | 18.00 **17** | 60.00 | 17 |
| | | | -16.00 | -52.00 | 0.00 | -45.00 | |
| S3 | | u3=31.00 | 65.00 | 28.00 **18** | 44.00 **2** | 20.00 | 20 |
| | | | -15.00 | 0.00 | 0.00 | 21.00 | |
| S4 | | u4=59.00 | 78.00 **10** | 47.00 | 72.00 **1** | 80.00 | 11 |
| | | | 0.00 | 9.00 | 0.00 | -11.00 | |

[ View/Modify Input Data ] [ MAIN Menu ] [ Exit TORA ]

## 3.Vogels Method.

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**TRANSPORTATION TABLEAU - (Vogel's Method)**

Title: transportation --(minimum cost)

Steps for generating transportation tableaus:
1. (Optional step) Initialize ONE of the simplex multiplier (u1, u2, ..., v1, v2 ...) to zero value (default u1 = 0)
2. Click (in any order) the cells defining the change-of-basis loop (if corret, cell changes color)
3. Click command button NEXT ITERATION (or ALL ITERATIONS) -- This step may be executed without Step 2

Initialize u or v
[ u1=0 ▼ ]

[ Next Iteration ] [ All Iterations ] [ Write to Printer ]

| Iter 1 | ObjVal = 1657.00 | | D1 | D2 | D3 | D4 | Supply |
|--------|---------|---|----|----|----|----|--------|
| | Name | | v1=19.00 | v2=-12.00 | v3=4.00 | v4=-20.00 | |
| S1 | | u1=0.00 | 19.00 **12** | 30.00 | 50.00 | 10.00 | 12 |
| | | | 0.00 | -42.00 | -46.00 | -30.00 | |
| S2 | | u2=14.00 | 40.00 | 54.00 | 18.00 **17** | 60.00 | 17 |
| | | | -7.00 | -52.00 | 0.00 | -66.00 | |
| S3 | | u3=40.00 | 65.00 | 28.00 **9** | 44.00 **3** | 20.00 **8** | 20 |
| | | | -6.00 | 0.00 | 0.00 | 0.00 | |
| S4 | | u4=59.00 | 78.00 **2** | 47.00 **9** | 72.00 | 80.00 | 11 |
| | | | 0.00 | 0.00 | -9.00 | -41.00 | |

[ View/Modify Input Data ] [ MAIN Menu ] [ Exit TORA ]

## 4.Spanning tree

**NETWORK MODELS**

| Problem Title: | spanning tree |
| No. of Nodes | 6 |

**Editing Grid:**
>>To DELETE, INSERT, COPY, or PASTE a column(row), click heading cell of target column(row), then invoke pull-down EditGrid menu
>>For INSERT mode, a single(double) click of target row/column will place new row/column after(before) target row/column.

**INPUT GRID - MINIMAL SPANNING TREE**

☑ **Check here if network is symmetrical**

|  |  | N1 | N2 | N3 | N4 | N5 | N6 |
|---|---|---|---|---|---|---|---|
|  | **Node Name** | A | B | C | D | E | F |
| N1 | A |  | 2.00 | 5.00 | infinity | 8.00 | infinity |
| N2 | B | 2.00 |  | 6.00 | 3.00 | infinity | infinity |
| N3 | C | 5.00 | 6.00 |  | 8.00 | 7.00 | infinity |
| N4 | D | infinity | 3.00 | 8.00 |  | infinity | 5.00 |
| N5 | E | 8.00 | infinity | 7.00 | infinity |  | 9.00 |
| N6 | F | infinity | infinity | infinity | 5.00 | 9 |  |

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**MINIMAL SPANNING TREE OUTPUT SUMMARY**

**Title: spanning tree**
**Steps for generating iterations:**
    1.  Select a STARTING NODE from drop-down list (or assume default N1)
    2.  Click command button NEXT ITERATION (or ALL ITERATIONS)

Next Iteration    All Iterations    Write to Printer

Starting Node
**N1 ▼**

**Updated minimal tree length = 22.00**
| 0. | Start at node N1 |
| 1. | Connect N2 [B] to N1 [A]: Length = 2.00 |
| 2. | Connect N4 [D] to N2 [B]: Length = 3.00 |
| 3. | Connect N6 [F] to N4 [D]: Length = 5.00 |
| 4. | Connect N3 [C] to N1 [A]: Length = 5.00 |
| 5. | Connect N5 [E] to N3 [C]: Length = 7.00 |

View/Modify Input Data    MAIN Menu    Exit TORA

## 5.CPM

### PROJECT PLANNING -- PERT/CPM

**Problem Title:** CPM

**Editing Grid:**
>>To DELETE, INSERT, COPY, or PASTE a column(row), click heading cell of target column(row), then invoke pull-down EditGrid menu
>>For INSERT mode, a single(double) click of target row/column will place new row/column after(before) target row/column.

#### INPUT GRID - CPM (CRITICAL PATH METHOD)

| Row | From Node | To Node | Activity Symbol | Duration |
|---|---|---|---|---|
| 1 | 1 | 2 | A | 6.00 |
| 2 | 1 | 5 | G | 2.00 |
| 3 | 1 | 6 | J | 13.00 |
| 4 | 2 | 3 | B | 4.00 |
| 5 | 2 | 4 | K | 9.00 |
| 6 | 2 | 8 | D | 2.00 |
| 7 | 3 | 4 | C | 7.00 |
| 8 | 4 | 7 | L | 3.00 |
| 9 | 5 | 6 | H | 10.00 |
| 10 | 6 | 7 | I | 6.00 |
| 11 | 7 | 10 | M | 5.00 |
| 12 | 8 | 9 | E | 4.00 |
| 13 | 9 | 10 | F | 10 |

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### PROJECT PLANNING -- PERT/CPM

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### PROJECT PLANNING - CPM

┌ Select Output Option ┐
CPM Calculations ▼

Next Step    All Steps    Write to Printer

**Title: CPM**

### SOLUTION STEPS

| | Forward Pass | | | Backward Pass | |
|---|---|---|---|---|---|
| **Step** | **Node** | **Earliest Time** | **Step** | **Node** | **Latest Time** |
| 1 | 1 | 0.00 | 11 | 10 | 25.00 |
| 2 | 2 | 6.00 | 12 | 7 | 20.00 |
| 3 | 3 | 10.00 | 13 | 4 | 17.00 |
| 4 | 4 | 17.00 | 14 | 3 | 10.00 |
| 5 | 5 | 2.00 | 15 | 6 | 14.00 |
| 6 | 6 | 13.00 | 16 | 5 | 4.00 |
| 7 | 7 | 20.00 | 17 | 9 | 15.00 |
| 8 | 8 | 8.00 | 18 | 8 | 10.00 |
| 9 | 9 | 13.00 | 19 | 2 | 6.00 |
| 10 | 10 | 25.00 | 20 | 1 | 0.00 |
| | Forward pass completed | | | Backward pass completed | |

| Activity | Duration | Earliest Start | Latest Completion | Total Float | Free Float |
|---|---|---|---|---|---|
| A | 6.00 | 0.00 | 6.00 | 0.00 | 0.00 |
| G | 2.00 | 0.00 | 4.00 | 2.00 | 0.00 |
| | 13.00 | 0.00 | 14.00 | 1.00 | 0.00 |

View/Modify Input Data    MAIN Menu    Exit TORA

**PROJECT PLANNING - CPM**

**Select Output Option**

CPM Calculations ▼

| Next Step | All Steps | Write to Printer |

Title: CPM

**SOLUTION STEPS**

| Activity | Duration | Earliest Start | Latest Completion | Total Float | Free Float |
|---|---|---|---|---|---|
| A | 6.00 | 0.00 | 6.00 | 0.00 | 0.00 |
| G | 2.00 | 0.00 | 4.00 | 2.00 | 0.00 |
| J | 13.00 | 0.00 | 14.00 | 1.00 | 0.00 |
| B | 4.00 | 6.00 | 10.00 | 0.00 | 0.00 |
| K | 9.00 | 6.00 | 17.00 | 2.00 | 2.00 |
| D | 2.00 | 6.00 | 10.00 | 2.00 | 0.00 |
| C | 7.00 | 10.00 | 17.00 | 0.00 | 0.00 |
| L | 3.00 | 17.00 | 20.00 | 0.00 | 0.00 |
| H | 10.00 | 2.00 | 14.00 | 2.00 | 1.00 |
| I | 6.00 | 13.00 | 20.00 | 1.00 | 1.00 |
| M | 5.00 | 20.00 | 25.00 | 0.00 | 0.00 |
| E | 5.00 | 8.00 | 15.00 | 2.00 | 0.00 |
| F | 10.00 | 13.00 | 25.00 | 2.00 | 2.00 |

Critical activities highlighted in red

| View/Modify Input Data | MAIN Menu | Exit TORA |

## 6.PERT

**Problem Title:** PERT

Editing Grid:
>>To DELETE, INSERT, COPY, or PASTE a column(row), click heading
cell of target column(row), then invoke pull-down EditGrid menu
>>For INSERT mode, a single(double) click of target row/column will
place new row/column after(before) target row/column.

**INPUT GRID - PERT (PROGRAM EVALUATION & REVIEW TECHNIQUE)**

| Row | From Node | To Node | Activity Symbol | a | m | b |
|---|---|---|---|---|---|---|
| 1 | 1 | 2 | A | 3.00 | 5.00 | 7.00 |
| 2 | 1 | 3 | B | 4.00 | 6.00 | 8.00 |
| 3 | 2 | 3 | C | 1.00 | 3.00 | 5.00 |
| 4 | 2 | 4 | D | 5.00 | 8.00 | 11.00 |
| 5 | 3 | 5 | E | 1.00 | 2.00 | 3.00 |
| 6 | 3 | 6 | F | 9.00 | 11.00 | 13.00 |
| 7 | 4 | 5 | DUMMY | 0.00 | 0.00 | 0.00 |
| 8 | 4 | 6 | G | 1.00 | 1.00 | 1.00 |
| 9 | 5 | 6 | H | 10.00 | 12.00 | 14.00 |

PROJECT PLANNING -- PERT/CPM

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PROJECT PLANNING - PERT

┌─ Select Output Option ─┐
Activity Mean/Var ▼

Next Step | All Steps | Write to Printer

Title: PERT

## ACTIVITY MEAN AND VARIANCE

| Activity | Activity Symbol | Mean Duration | Variance |
|----------|-----------------|---------------|----------|
| 1-2 | A | 5.00 | 0.44 |
| 1-3 | B | 6.00 | 0.44 |
| 2-3 | C | 3.00 | 0.44 |
| 2-4 | D | 8.00 | 1.00 |
| 3-5 | E | 2.00 | 0.11 |
| 3-6 | F | 11.00 | 0.44 |
| 4-5 | DUMMY | 0.00 | 0.00 |
| 4-6 | G | 1.00 | 0.00 |
| 5-6 | H | 12.00 | 0.44 |

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PROJECT PLANNING - PERT

┌─ Select Output Option ─┐
PERT Calculations ▼

Next Step | All Steps | Write to Printer

Title: PERT

## PATH MEAN AND STD. DEVIATION

| Node | Longest Path Based on Mean Durations | Mean Duration | Std. Deviation |
|------|--------------------------------------|---------------|----------------|
| 2 | 1- 2 | 5.00 | 0.67 |
| 3 | 1- 2- 3 | 8.00 | 0.94 |
| 4 | 1- 2- 4 | 13.00 | 1.20 |
| 5 | 1- 2- 4- 5 | 13.00 | 1.20 |
| 6 | 1- 2- 4- 5- 6 | 25.00 | 1.37 |

View/Modify Input Data | MAIN Menu | Exit TORA

# 7.QUEUING MODELS

**QUEUEING MODELS**

| Problem Title: | QUEUING |
|---|---|
| No. of Scenarios | 1 |

**Editing Grid:**
>>To DELETE, INSERT, COPY, or PASTE a column(row), click heading
cell of target column(row), then invoke pull-down EditGrid menu
>>For INSERT mode, a single(double) click of target row/column will
place new row/column after(before) target row/column.

**INPUT TABLE - M/M/c queues**

| Scenario | Lambda | Mu | Nbr. of Servers | System Limit | Source Limit |
|---|---|---|---|---|---|
| 1 | 8.00 | 10 | 1 | infinity | infinity |

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**QUEUEING MODELS**

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**QUEUEING OUTPUT ANALYSIS**

**Select Output Option**

Scenario1

[ Next Iteration ]  [ All Iterations ]  [ Write to Printer ]

**Title: QUEUING**

**Scenario  1:(M/M/1):(GD/infinity/infinity)**

| | | | |
|---|---|---|---|
| Lambda = | 8.00000 | Mu = | 10.00000 |
| L'da eff = | 8.00000 | Rho/c = | 0.80000 |
| Ls = | 4.00000 | Lq = | 3.20000 |
| Ws = | 0.50000 | Wq = | 0.40000 |

| n | Probability, pn | Cumulative, Pn | n | Probability, pn | Cumulative, Pn |
|---|---|---|---|---|---|
| 0 | 0.20000 | 0.20000 | 23 | 0.00118 | 0.99528 |
| 1 | 0.16000 | 0.36000 | 24 | 0.00094 | 0.99622 |
| 2 | 0.12800 | 0.48800 | 25 | 0.00076 | 0.99698 |
| 3 | 0.10240 | 0.59040 | 26 | 0.00060 | 0.99758 |
| 4 | 0.08192 | 0.67232 | 27 | 0.00048 | 0.99807 |
| 5 | 0.06554 | 0.73786 | 28 | 0.00039 | 0.99845 |
| 6 | 0.05243 | 0.79028 | 29 | 0.00031 | 0.99876 |
| 7 | 0.04194 | 0.83223 | 30 | 0.00025 | 0.99901 |
| 8 | 0.03355 | 0.86578 | 31 | 0.00020 | 0.99921 |
| 9 | 0.02684 | 0.89263 | 32 | 0.00016 | 0.99937 |

[ View/Modify Input Data ]   [ MAIN Menu ]   [ Exit TORA ]

**QUEUEING MODELS**

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**QUEUEING OUTPUT ANALYSIS**

┌─ Select Output Option ─┐
 Comparative Analysis ▼

[ Next Iteration ]  [ All Iterations ]  [ Write to Printer ]

**Title: QUEUING**

**Comparative analysis**

| Scenario | c | Lambda | Mu | L'da eff | p0 | Ls | Lq | Ws | Wq |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 8.00000 | 10.00000 | 8.00000 | 0.20000 | 4.00000 | 3.20000 | 0.50000 | 0.40000 |

[ View/Modify Input Data ]  [ MAIN Menu ]  [ Exit TORA ]