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1. Define the following sets in a compact GAMS form.

Set T = {1990,1992,1993,1994,1995}

Set MC = {MC1,MC2,…….MC10}

1. Identify illegality in the following GAMS statement:

SET Illegale1 / A15BC\*A10BC /

Illegale2 / A1X1\* A9X9 /

Illegale3 / A1\* B9 / ;

1. Given the following quantity of government and private sector labors by household area (in Thousands).

Government Sector Private Sector

Urban Household area 400 1000

Rural Household Area 350 700

Enter the labor data in a GAMS model using both set, parameter and table GAMS reserved words.

1. Given the time set t = 2000 to 2005 and the non-homogenious rows Shown in the following matrix:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mean | 500 | 600 | 700 | 800 | 900 | 1000 |
| Median | 300 | 320 | 340 | 380 | 400 | 500 |
| Variance | 10 | 12 | 16 | 18 | 20 | 20 |
| Maximum | 800 | 900 | 1000 | 1200 | 1400 | 1800 |

Read the above matrix in GAMS format using set and table reserved words.

1. Convert the following mathematical specifications or equations to a GAMS Format:

TOTCm = ∑iCim

COUNT= ∑i∑j Aij

EMP= ∑t Lt Mt

OUTPUT= ∏i INPUT(i) \*\*SHARE(i)

Using Sets , Parameters , Tables , SUM and PROD reserved GAMS key words.

1. Given the following GAMS statements: \* Declaration and definition of set and model parameters

Set t / 2000 \* 2005 /

Parameter

pop(t) / 2000 90 /

Growth(t) / 2000 2, 2001 2.1

2002 2.2, 2003 2.3

2004 2.4, 2005 2.5 / ;

Compute population size during the period (2000 – 2005) using GAMSLOOP statement, Given that pop(t) is the population size and Growth(t) is the annual population growth Rate(%).

1. Develop the following algorithm using the GAMS if-elseif-else Statement.

Mathematical Formulation (with $ Operator)

P( i ) $( f <= 0 ) = -1 ;

P( i ) $ (( f > 0) and ( f < 1 )) = P( i ) \*\*2 ;

P( i ) $ (f > 1) = P( i ) \*\*3 ;