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MATRIC NUMBER: 18/sci01/059

DEPARTMENT: Computer science

0 6 1

4 -7 -3

3 1 2

9 5 3

1 1 0

1 -2 3

2 1 -4

1 4 8

-3 0 5

6 2 1

A= B= C=

1 4 8

-3 0 5

6 2 1

(i) A=

[A]= 1(0-10)-4(-3-30)+8(-6-0)

[A]=-10+132-48=74

[A]Not equal to 0, therefore, matrix A is a non-singular matrix

(ii) B= BT=

1 1 2

1 -2 1

0 3 -4

1 1 0

1 -2 3

2 1 -4

[BT]= 1(8-3)-1(-4-0)+2(3+0)

[BT]=5+4+6=15

[BT]Not equal to 0, therefore, matrix BT is a non-singular matrix

(iii) Rank of Y

1 - 1 9

10 -7 3

9 2 3

1 10 9

-1 -7 2

9 3 3

A+C= (A+C)T=

[(A+C)T]=1(-21-6)+1(30-27)+9(20+63)

[(A+C)T]=-27+3+747=723

[(A+C)T]Not equal to 0, therefore, matrix (A+C)T is a non-singular matrix

(iv) B+C =

1 7 1

5 -9 0

5 2 2

[B+C]= 1(-18-0)-7(10-0)+1(10+45)

[B+C]=-18-70+55=-33

[B+C]Not equal to 0, therefore, matrix B+C is a non-singular matrix

2 11 9

2 -9 5

11 4 -1

(v) A+B+C=

[A+B+C]=2(9-20)-11(-2-55)+9(8-99)

[A+B+C]=22+627-819=170

[A+B+C]Not equal to 0, therefore, matrix A+B+C is a non-singular matrix