

TI-82

RREF PrOGraM

MTH 1230

```
ClrHome
ClrList L1
dIM[A]→L1
L1(1)→0
L1(2)→T
Lbl 0
ClrHome
Menu("MATRIX PROGRAM","RREF",D,"QUIT",F)
Lbl A
ClrHome
Disp [A]▶Frac
Pause
Goto 0
Lbl F
ClrList L1
ClrHome
Stop
Lbl Z
sum({1,0}dim([A]))→R
sum({0,1}dim([A]))→Q
For(I,1,R)
For(J,1,Q)
If abs([A](I,J)<(1E-10))
0→[A](I,J)
End
End
ClrList L1
For(0,1,T)
[A](0,0)→L1(0)
End
SortD(L1)
If L1(1)=0 or (T-0)≥2
Then
2→X
Disp "INFINITE"
Disp "SOLUTIONS"
Disp [A]▶Frac
Pause
Goto 0
T-0→H
If H<2 and C=2
Then
For(H,1,0-1)
ClrHome
[A](H,T-1)→E
[A](H,T)→F
-E→E
F/E→F
Pause
End
ClrHome
Pause
End
T-0→H
If H≥2 and H≤3 and C=2
Then
If [A](1,T-1)=0
Then
Goto 0
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End
For(G,1,0)
ClrHome
[A](G,T-1)→E
[A](G,T)→F
-E→E
F/E→F
Output(1,1,"VARIABLE ")
Output(1,10,G)
Disp ""
Disp E▶Frac,"(T+",F▶Frac,")"
Pause
End
ClrHome
Output(1,1,"VARIABLE ")
Output(1,10,T-1)
Output(3,1,"T")
Pause
End
Goto 0
End
ClrList L1
For(0,1,T-1)
[A](0,0)→L1(0)
End
SortD(L1)
If L1(1)=0 and [A](0,T)≠0
Then
3→X
Disp "NO SOLUTIONS"
Goto V
End
1→X
If X=1
Then
Disp "ONE SOLUTION"
Goto V
End
Lbl V
Disp [A]▶Frac
Pause
Goto 0
Lbl B
Disp [B]▶Frac
Pause
Goto 0
Lbl C
1→C
Goto W
Lbl D
2→C
Goto W
Lbl W
ClrList L1
dim([A]→L1
L1(1)→A
L1(2)→B
1→Q
For(F,1,B
If Q≤A
Then
0→P
For(V,Q,A
If abs([A](V,F)>10^(-10)

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Then
rowSwap([A],V,Q)→[A]
V→P
Else
Ø→[A](V,F)
End
End
If P>Ø
Then
1/[A](Q,F)→G
*row(G,[A],Q)→[A]
For(Y,1,A
If C=1
Then
If Y>Q
Then
*row+(-[A](Y,F),[A],Q,Y)→[A]
Ø→[A](Y,F)
End
End
If C=2
Then
If Y≠Q
Then
*row+(-[A](Y,F),[A],Q,Y)→[A]
Ø→[A](Y,F)
End
End
End
1+Q→Q
End
End
End
Goto Z

```