Discussion - Week1

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```
library(matlib)
```

Week 1 - Discussion

Pick one of the exercises in the readings this week. Solve the exercise as best as you can. If you have issues, explicate them, so that all of us can help.

```
A <- matrix(c(3,1,4, 2,-1,2), nrow=3, ncol=2)
b <- c(1,2,2)

showEqn(A, b)
```

```
## 3*x1 + 2*x2  =  1
## 1*x1 - 1*x2  =  2
## 4*x1 + 2*x2  =  2
```

```
Solve(A,b, verbose=TRUE)
```

```
##
## Initial matrix:
##      [,1] [,2] [,3]
## [1,]    3    2    1
## [2,]    1   -1    2
## [3,]    4    2    2
##
## row: 1
##
##  exchange rows 1 and 3
##      [,1] [,2] [,3]
## [1,]    4    2    2
## [2,]    1   -1    2
## [3,]    3    2    1
##
##  multiply row 1 by 0.25
##      [,1] [,2] [,3]
## [1,]    1  0.5  0.5
## [2,]    1 -1.0  2.0
## [3,]    3  2.0  1.0
##
##  subtract row 1 from row 2
##      [,1] [,2] [,3]
## [1,]    1  0.5  0.5
## [2,]    0 -1.5  1.5
## [3,]    3  2.0  1.0
##
##  multiply row 1 by 3 and subtract from row 3
##      [,1] [,2] [,3]
## [1,]    1  0.5  0.5
## [2,]    0 -1.5  1.5
## [3,]    0  0.5 -0.5
##
## row: 2
##
##  multiply row 2 by -0.6666667
##      [,1] [,2] [,3]
## [1,]    1  0.5  0.5
## [2,]    0  1.0 -1.0
## [3,]    0  0.5 -0.5
##
##  multiply row 2 by 0.5 and subtract from row 1
##      [,1] [,2] [,3]
## [1,]    1  0.0  1.0
## [2,]    0  1.0 -1.0
## [3,]    0  0.5 -0.5
##
##  multiply row 2 by 0.5 and subtract from row 3
##      [,1] [,2] [,3]
## [1,]    1    0    1
## [2,]    0    1   -1
## [3,]    0    0    0
## x1    =   1
##   x2  =  -1
##    0  =   0
```