

# HW2

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## 1

After defining the matrices, the only calculations that couldn't be run were:  $B * y$ ,  $x * A$ , and  $x * y'$ . The problem with the first two were that ".\*" is needed for element-wise multiplication. To get  $x * y'$  to work either add the "." or get rid of the apostrophe to get the number of rows and columns to match.

## 2

Two ways to solve the system are with `linsolve` and `A\b`. The rank and determinant are found with the commands `det` and `rank`.

## 3

Calculating  $A * x$  will not be exactly equal to `b` because of rounding error due to how matlab computes the answer.

## 4

I use a while loop to add a random integer between one and five to itself until it is above 20. This takes between five and twelve loops to achieve.

## 5

I used "fplot3" to create a parametric curve that spirals upward. Depending on the angle it is viewed from it can look like a sine or cosine wave, and from above it creates an infinity pattern.