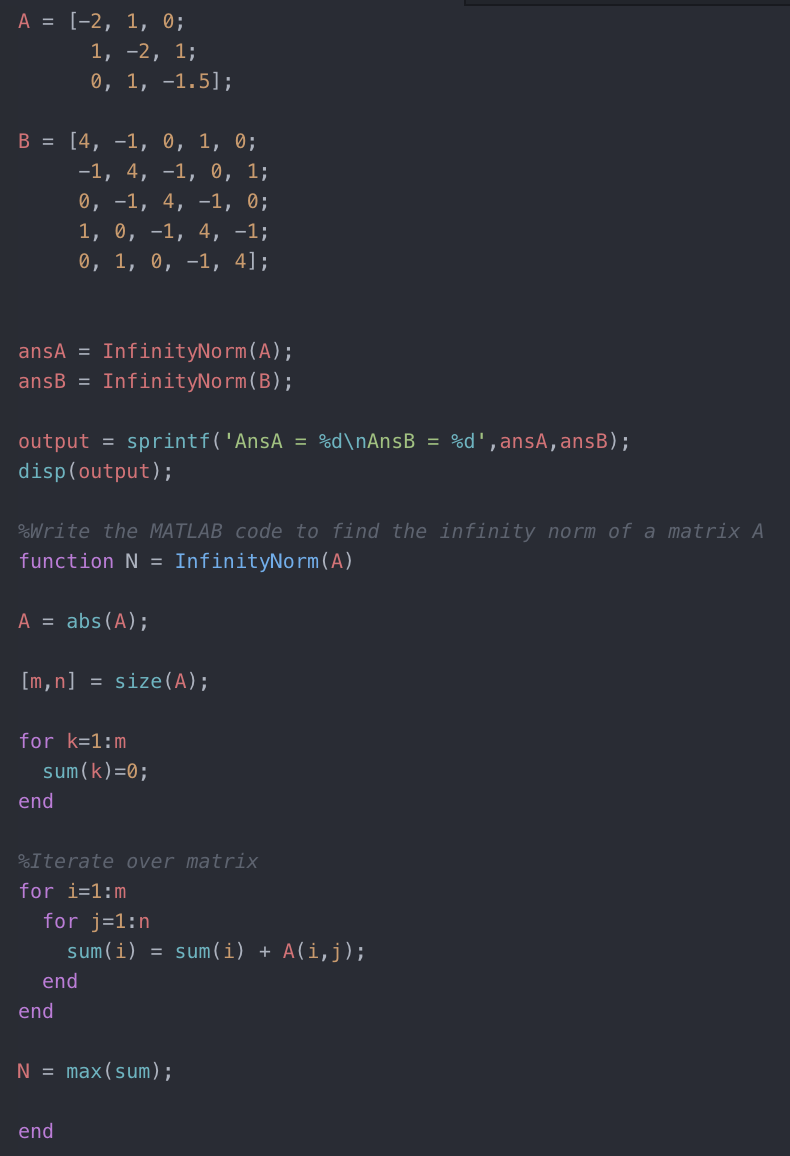
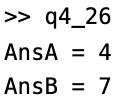
**CS3081 – Computational Mathematics**

**Assignment 4**

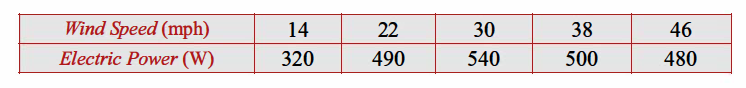
*Brandon Dooley - #16327446*

***Question 4.26 –*** *Write a user-defined MATLAB function that calculates the infinity norm of any matrix. For the function name and arguments use N = InfinityNorm (A), where A is the matrix, and N is the value of the norm. Use the function for calculating the infinity norm of A and B.*





***Question 6.13 –*** *The power generated by a windmill varies with the wind speed. In an experiment, the following 5 measurements were obtained:*

**

*Determine the fourth-order polynomial in the Lagrange form that passes through the points. Use the polynomial to calculate the wind speed of 26mph.*

The fourth order Lagrange polynomial passing through the 5 points (, ), (, ), (, ), (, ), (, ) is defined as

Now, using the provided data substitute the points (14, 320), (22, 490), (30, 540), (38, 500) and (46, 480) into the Lagrange polynomial for (, ), (, ), (, ), (, ), (, )

= 14, = 22, = 30, = 38, = 46

= 320, = 490, = 540, = 500, = 480

When this polynomial is multiplied out and simplified we are left with:

Using this polynomial we can determine the power of the windmill when the windspeed is 26mph. This is done by solving for :

Therefore, we have determined using the fourth order Lagrange polynomial that the power of the windmill when the windspeed is 26mph is .