ASTE 404
Quiz 2
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Q1:

```
int main()
{
    int a[] = {0, 1, 2, 3};
    int b[] = {2, 3, 4, 5};
    int *c = new int[4];

    for(int i = 0; i < 4; i++)
    {
        c[i] = a[i] + b[i];
    }
}
```

Q2:

def is used for defining functions.
return is used to finish the function, give an output, and return to the code where the function was called.
import is used to add code from outside packages to the code you are writing.
numpy.linspace is a function that returns an evenly spaced set of numbers for a given range and a number of numbers (length of the array)
numpy.reshape changes the shape (dimensions) of an array without changing the data in it.
numpy.zeros makes an array of some given dimentions and fills it with zeros.
range is similar to linspace, but instead of giving a number of values, the third argument is the interval between numbers.
elif is used in if statements. It executes code if the original if statement failed, and sets a new condition to check for, unlike else which runs at the end if all if statements failed.

Q3:

The value of c is 3.0

Q4:

False

Q5:

Data would be [2, 1, 3, 5, 4, 3]

Q6:

Call by value is when arguments are passed into a function as actual, raw values, as opposed to pointers or references. This way, anything that happens to those values in the function has no effect on the variables that may have been used as arguments when the function was called.

Q7:

False

This is because SOR is a method of accelerating an iterative solver, while the Thomas algorithm is a direct solver. An iterative solver tries to improve upon its estimate of the solution vector with every iteration, and the SOR improves the speed of this convergence by taking the last rate of change into account. This idea cannot be implemented into a direct algorithm, since it does not iterate that way over the solution vector.