COP 3337 Assignment 4

Problem 1

1. A
2. int * p = new int[50];
3. *numPtr is the value that the pointer is pointing to and &numPtr is the address of the pointer.
4. In the provided code, nextPtr is pointing to the value of firstPtr. firstPtr is then deallocated, and so the delete statement for nextPtr on the next line cannot be used since this space has already been deallocated and this pointer is no longer pointing anywhere.
5. int * num;
    a. *num = new int[10];
    b. for(int i = 0; i < 10; i++)
    {
        std::cout << “Enter the value of array index “ << i << std::endl;
        std::cin >> *num[i];
    }
    c. delete [] num;
6. A shallow copy copies only the data fields of an object to the new object, but just reassigns the address of any pointers in that object. A deep copy not only copies the data fields but also creates a new variable in the heap for each pointer rather than just updating the address of the pointer.

Problem 2

```
Displaying Person 1: Name: Domenic. Age: 19
Displaying Person 2: Name: Domenic. Age: 19
Displaying Person 3: Name: Domenic. Age: 19
Changing Person 1 name to Brian.
Displaying All Person Objects
Name: Brian. Age: 19
Name: P↔☺└. Age: 19
Name: Domenic. Age: 19
```

Problem 3

```
Invalid insert attempted for the number 21!
{ 7, 13, 20 }
Invalid delete attempted for the number 22!
{ 7, 20 }
{ --- }
s3.isEqualTo(s1) = 1
```

Problem 4

```
Enter 10 double values to find the average.
5
2.3
5.6
4.5
85
3.6
2.8
43.6
85.3
40.99
The average of these values is: 27.869
```

Problem 5

```
Date 1 => Year: 2023 Month: 10 Day: 1
Date 2 => Year: 2078 Month: 10 Day: 13
```