

Final Sample Question 4

Given the following values, hash function, and rehash function complete the following questions. You can assume that when the 2 wide bucket is full, it rehashes the column vertically.

```
int[] list; // Hashtable
```

```
int hash(int idNum) {  
    return (idNum % 10);  
}
```

```
int rehash(int location) {  
    while(list[location] != null) {  
        location = (location+1) % 10;  
    }  
    return location;  
}
```

```
// Insert numbers in the following order, 4500, 3, 1200, 1201, 3609, 3606, 3709, 505, 1
```

[0]	
[1]	
[2]	
[3]	
[4]	
[5]	
[6]	
[7]	
[8]	
[9]	

(a) Linear Probing

[0]		
[1]		
[2]		
[3]		
[4]		
[5]		
[6]		
[7]		
[8]		
[9]		

(b) 2 wide Buckets

[0]	
[1]	
[2]	
[3]	
[4]	
[5]	
[6]	
[7]	
[8]	
[9]	

(c) Chaining