**Exam 1**

**1.)**

| Steps | Statement | Cost | Time |
|---|---|---|---|
| 1 | int c = 0; | c1 | 1 |
| 2 | double t=0; | c2 | 1 |
| 3 | (int=0; i<s; i+=1) | c3 | n |
| 4 | (a[i]>0) | c4 | 1 |
| 5 | t+=a[i]; | c5 | n-1 |
| 6 | c+=1; | c6 | n-1 |
| 7 | b[c-1]=t/c; | c7 | n-1 |
| 8 | (a[i]<0) | c8 | 1 |
| 9 | t+=-1*a[i]; | c9 | 1 |
| 10 | c+=1; | c10 | n-1 |
| 11 | b[c-1]=t/c; | c11 | n-1 |
| 12 | return c; | c12 | 1 |

**T(n)=c1(1)+c2(1)+c3(n)+c4(1)+c5(n-1)+c6(n-1)+c7(n-1)+c8(1)+c9(1)+c10(n-1)+c11(n-1)+c12(1)**

**T(n)=c1(1)+c2(1)+c3(n)+c4(1)+c5(n)-c5(1)+c6(n)-c6(1)+c7(n)-c7(1)+c8(1)+c9(1)+c10(n)-c10(1)+c11(n)-c11(1)+c12(1)**

**T(n)= (c3+c5+c6+c7+c10+c11)n+(c1+c2+c4-c5-c6-c7+c8+c9-c10-c11+c12)**

**T(n)=6n+1**

**The n represents the size of the data when the input is placed in each input item.**

2.)
```
template <class T>
int MaximumCount (int data [], int n)
{
        int data[i];
        int n = sizeof(data)/sizeof(data[0]);

        for(int i=0; i<n; i++)
        {
                if (data[i] > data[i+1] || data[i+1]>data[i])
                {
                  return data[i];
                 }
                else if (data[i]==data[i+1])
                {
                        cout << data[i];
                }
                else
                {
                        return 1;
                }
        }
}
```

3.) **Number 3 is on a separate file "CS 246 Exam 1" from Replit.**