CSCE 747 - Mutation Testing Activity Name(s):

The following code iterates over an array and makes all negative values positive.

```
1. public int[] makePositive(int[] a){
2.    int threshold = 0;
3.    for(int i=0; i < a.length; i++){
4.        if(a[i] < threshold){
5.            a[i]= -a[i];
6.        }
7.    }
8.    return a;
9. }</pre>
```

1: How many mutations are possible for the following operators:

- Relational Operator Replacement
- Arithmetic Operator Replacement

2: Apply the relational operator replacement operation to statement 4 of the method, and design a test case that would kill that mutant.

3: Design an eq mutation opera	quivalent mutant tha tors.	at no test case ca	n detect. You may	apply up to three
4: Design a vali	id, but useless muta	ant. You may app	ly up to three muta	ition operators.