

Lab Goal : This lab was designed to teach you how to use an ArrayList.

Lab Description : Write a Number class that can be used to determine if a number is odd, even, or perfect. Then, use this Number class to determine how many numbers in the list are odd, even, and perfect.

Sample Data :

```
5 12 9 6 1 4 8 6
5 12 3 7 28 496 81 65 33 11
1 2 3 4 5 6 7 8 11 13 151 16 17 18 19 20
```

Sample Output :

```
[5, 12, 9, 6, 1, 4, 8, 6]
odd count = 3
even count = 5
perfect count = 2
```

```
[5, 12, 3, 7, 28, 496, 81, 65, 33, 11]
odd count = 7
even count = 3
perfect count = 2
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 11, 13, 151, 16, 17, 18, 19, 20]
odd count = 9
even count = 7
perfect count = 1
```

Files Needed ::

```
Number.java
NumberAnalyzer.java
Lab04b.java
```

+10 Point Bonus ::

Check to see how many perfect numbers exist in the list.

6 is perfect because it is equal to the sum of its divisors.

The divisors of 6 are 1 2 3
 $1 + 2 + 3 = 6$

Odd / Even help

ODD – any number when divided by 2 that has a remainder of 1

EVEN – any number when divided by 2 that has a remainder of 0

% - modulus – used to find the remainder of division