

Lab 1

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Problem 1

Compute the sum of the sequence 100 to 1000, going up by a constant value of 100

```
sum(seq(100,1000,100))
```

```
## [1] 5500
```

Problem 2

Compute the sum of these numbers, (1,3,2,4,3,5,4,3,4,5,6,5,6,7,6,5,6,5,4,3,4,5)

```
sum(c(1,3,2,4,3,5,4,3,4,5,6,5,6,7,6,5,6,5,4,3,4,5))
```

```
## [1] 96
```

Problem 3

Write a custom sequence generator function using a for loop that generates a sequence from a starting integer value to an ending integer value in steps of 1. Demonstrate that it can produce the sequence 1 to 10.

```
seq_gen <- function(start,end) {  
  for(i in start:end){  
    print(i)  
  }  
}  
  
seq_gen(1,10)
```

```
## [1] 1
## [1] 2
## [1] 3
## [1] 4
## [1] 5
## [1] 6
## [1] 7
## [1] 8
## [1] 9
## [1] 10
```

Problem 4

Write a custom function to implement the following general equation to find the sum of any constant series:

Demonstrate that your function correctly produces the sum for the series below:
`seq(10,100,10)`

```
#> [1] 10 20 30 40 50 60 70 80 90 100
```

```
const_series <- function(X1, Xn, step)
{
  (((Xn-X1)/step) + 1) * ((X1+Xn)/2)
}
const_series(10, 100, 10)
```

```
## [1] 550
```