

Lab 1: Introduction to R

- 1) Use R to find all the numbers between 1 and 2000 which are multiples of 317.

Note: You will need the operators : and %%

Example:

```
> 1:5  
[1] 1 2 3 4 5  
> 18 %% 5  
[1] 3  
> 4 %% 2  
[1] 0
```

- 2) Use R to find out how many numbers between 1 and 2000 are multiples of 17.

- 3) Find all the words with less than 6 or more than 8 characters in the vector c("Maine", "Maryland", "Minnesota", "Massachusetts", "Michigan", "Mississippi", "Missouri", "Montana").

Note: You will need the OR operator | and function **nchar()**

Example:

```
> a <- "Maryland"  
> nchar(a)  
[1] 8
```

- 4) Write a function that returns the product of the minimum and maximum of the input vector. Test your function for an input vector (8, 17, 21, 2, -9, 0).

Note: You will need **max()** and **min()**.

- 5) Write a function that converts temperatures from Celsius to Fahrenheit with the formula:

$$^{\circ}\text{F} = \frac{9}{5} ^{\circ}\text{C} + 32$$

Test your function for an input of 32°C.

- 6) Write a function that finds all the numbers within a vector x that are multiples of an integer y (a general function for question 1).