1. Calculate the cumulative sum (’running total’) of the numbers 2,3,4,5,6. cumsum(c(2,3,4,5,6)). Calculate the cumulative sum of those numbers, but in reverse order. Hint: use the rev function. cumsum(rev(c(2,3,4,5,6)))
2. Read in the dataset, look at the first few rows with head and inspect the data types of the variables in the data frame with str, Find minimum, maximum, length, mean and variance of any three columns. Calculate the correlation between any two attributes
3. Read the pupae data. Make a scatter plot of Frass vs. PupalWeight, with blue solid circles for a CO2 concentration of 280ppm and red for 400ppm. Also add a legend.
4. For a normal random variable X with mean 5.0, and standard deviation 2.0, find the probability that X is less than 3.0. Find the probability that X is greater than 4.5 Find the value K so that P(X > K) = 0.05 When tossing a fair coin 10 times, find the probability of seeing no heads (Hint: this is a binomial distribution.) Find Find the probability of seeing exactly 5 heads Find the probability of seeing more than 7 heads
5. Use the pupae data. Perform a simple linear regression of Frass on PupalWeight.
6. Using the Pulse data, build a model to see if Pulse2 can predict whether people were in the Ran group
7. Read the following list: veclist <- list(x=1:5, y=2:6, z=3:7) Using sapply, check that all elements of the list are vectors of the same length. Also calculate the sum of each element. Add an element to the list called ’norms’ that is a vector of 10 numbers drawn from the standard normal distribution. Using the pupae data
8. Write a script that prints "Hello" if the variable x is equal to 1. Write a script that will print "Even Number" if the variable x is an even number, otherwise print "Not Even". Write a script that will print 'Is a Matrix' if the variable x is a matrix, otherwise print "Not a Matrix". Hint: You may want to check out help(is.matrix). Create a script that given a numeric vector x with a length 3, will print out the elements in order from high to low. You must use if,else if, and else statements for your logic. Write a script that uses if,else if, and else statements to print the max element in a numeric vector with 3 elements.
9. Demonstrate matrix operations, [Addition and Substraction](https://r-coder.com/matrix-operations-r/#Addition_and_substraction), [Transpose a matrix in R](https://r-coder.com/matrix-operations-r/#Transpose_a_matrix_in_R),3 Matrix multiplication in R: Multiplication by a scalar, Element-wise multiplication, Matrix multiplication
10. Demonstrate matrix operations: Power of a matrix in R, Determinant of a matrix in R, Inverse of a matrix in R, Rank of a matrix in R
11. Generate a sample of random normal deviates, and a sample of random exponential deviates. Compute some summaries
12. Write a R program to multiply two vectors of integers type and length 3. Write a R program to divide two vectors of integers type and length 3. Write a R program to sort a Vector in ascending and descending order

<https://github.com/rekharchandran/R-programming-Exercises-Practice-Solution/blob/master/R%20Conditional%20Statement%20.ipynb>

<https://www.w3resource.com/r-programming-exercises/vector/index.php>

<https://www.westernsydney.edu.au/__data/assets/pdf_file/0011/862346/00_SolutionsExercises.pdf>

<https://r-coder.com/matrix-operations-r/>