1. Write a program that takes the command line arguments of types string, integer and decimal value. In case of a string, its length should be displayed, for an integer value, it should be multiplied by 100, and for a decimal value, we need to take its power of 3.
2. Initialize a list of records, consisting of name and age values. Sort list with respect to name and then with age.
3. Initialize a list of integers, 10, 20, 30, 40. Create another list using the first list, such that at its initialization, the new list is initialized like this: Item 1: 10, Item 2: 20, Item 3: 30, Item 4: 40.
4. Suppose we have initialized a list of 4 integers. You need to sum the elements of the list without using any loops or calling list elements through their indexes.
5. Suppose we have two numbers a=10 and b=20. You need to swap the numbers without using any third temporary variable, or any arithmetic or logical operators.
6. Suppose you have a range of numbers, and their respective grades:

   10 – 30, grade E

   31 – 50, grade D

   51 – 70, grade C

   71 – 90, grade B

   91 – 100, grade A

   Write a switch – case statement, that takes the marks and show the grade.

7. Initialize a list of Map with the following items:

   {"position": 10, "name": "Jawad"},

   {"position": 33, "name": "Faisal"},

   {"position": 4, "name": "Zahid"},

   {"position": 6, "name": "Ali"},

   {"position": 9, "name": "Noman"},

   {"position": 4, "name": "Ben"},

   Sort the list with first with respect to position, and then with respect to name in case the positions are same.

8. Initialize a list of Map with the following items:

   {"name":"Ali", "age":45, "marks":32 },

   {"name":"Noman", "age":32, "marks":23 },

   {"name":"Faisal", "age":41, "marks":43 },

   {"name":"Noman", "age":11, "marks":43 },

   {"name":"Faisal", "age":8, "marks":43 },

   Print those records whose age is greater than 30 and whose name is either Noman or Faisal

9. Write an example of function definition and function call with named parameters.
10. Write arrow functions for the following equations:

    A=a2+b4

    Z=p2+5t+A

11. Write arrow functions for the following equations:

    A =x^2+2xy+$p.Z$

    Z = a ^{2} + 4.B^2 – 8b + 2a

    B =n^2+qn+1

12. Suppose the equation is:

    Z = x^2 + 4y^2 – 8N^2

    Where N is represented by a separate equation:

    N = p2 + q2

    Solve ‘Z’ with arrow function, such that you need to define the arrow function N within

    the body of Z.

13. Given the following list: ['apples', 'bananas', 'oranges'];

    Append a string with each element of the list and capitalize each element of list. Use a combination of map and forEach function.

14. Create a small calculator application using typedef functions performing these operations, add, subtract, multiply, and divide.

15. Suppose you have the following array,

    List<Map<String, String>> myArray = [

    {'name': 'ali', 'age': '45'},

    {'name': 'noman', 'age': '34'},

    ];

    Display the key and value of array elements.

    Display the values of the array

16. Suppose we have the following arrays:

    var myArray1 = [3, 4, 5]

    var myArray2 = [6, 7, 8]

    Write code to append the myArray2 into myArray1.

17. Suppose we have an Dart object { 'name': 'Devin', 'hairColor': 'brown' }

    Write code to change value of hairColor using spread syntax (…) three dots.

18. Write an example of defining an arrow function within another arrow function.
19. Create a class Person with attributes: id, name, age.

    Derive two classes from person, named Student and Teacher.

    The extra attributes of Student are cgpa, currently enrolled semester (e.g., FA22 or SP22, etc), admission date.

    The extra attributes of Teacher are salary, designation (Lecturer, Assistant Professor, Professor, etc), department, and joining date.

    Populate a list of at least 3 records in each class using class objects.

    A user should be able to search a student or teacher with the provided ID. You should store objects of Teacher and Student in a list.

    Print list of students whose cgpa is greater than 3.7.

20. Given the following list of objects (name, age, marks), you need to write myObjects.where().forEach() function, so that the name, age, and marks of those students are

printed on screen whose age is greater than 25 and marks are greater than equal to 50, and name is Alice or Bob

myObjects.add(Student(name: 'Alice', age: 25, marks: 55));

myObjects.add(Student(name: 'Bob', age: 30, marks: 50));

myObjects.add(Student(name: 'Alice', age: 27, marks: 40));

myObjects.add(Student(name: 'Charlie', age: 22, marks: 45));

21. Given the following list of objects, you need to write myObjects.where().forEach() function, so that the name, age, and marks of those students are printed on screen whose age is greater than 30 and name is Noman or Faisal.

    Student(name:"Ali", age:45, marks:32),

    Student(name:"Faisal", age:41, marks:43),

    Student(name:"Noman", age:11, marks: 43),

    Student(name:"Faisal", age:8, marks:43)