

# DSC 106: Assignment 1

## PART A

**Question 1:** Write a function in `part_a.js` to print "WELCOME TO DSC 106" in the paragraph tag below

WELCOME TO DSC 106

**Question 2:** Print the following pattern: \*\*\*\*\* (15 asterisks) using for loop.

Solution:

```
*****
```

**Question 3:** Print the following pattern: \*#####\* (15 asterisks) using for loop and if-else statements in javascript.

Solution:

```
*#####*
```

**Question 4:** Print the following pattern: \*\*\*\*\* (15 asterisks) VERTICALLY using for loop.

Solution:

```
*
*
*
*
*
*
*
*
*
*
*
*
*
*
*
```

**Question 5:** Print the following pattern:

```
*****
*****
*****
*****
*****
*****
*****
*****
```

Solution:

```
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
```

Question 6: Print the following pattern:

```
*
**
***
****
*****
*****
*****
*****
```

Solution:

```
*
**
***
****
*****
*****
*****
*****
```

Question 7: Print the following pattern:

```

      *
     ***
    *****
   ********
  **********
 
```

Solution:

```

      *
     ***
    *****
   ********
  **********
 
```

**Question 8: Print the following pattern:**

```

      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1
 1 5 10 10 5 1
 
```

Solution:

```

      1
     1 1
    1 2 1
   1 3 3 1
  1 4 12 4 1
 1 5 20 20 5 1
 
```

**Question 9: Sort the given array and find out the median of the sorted array. Array: [-3,8,6,5,-4,3,2,1]**

Solution:

2.5

**Question 10: Array operations**

**Array A: [10, 20 , 30 , 40, 55, 25]**

**Array B: [15, 30 , 30 , 10, 15, 5]**

1. Normalize array A in the range of (0,1)
2. Calculate mean of array A and B
3. Calculate variance of array A and B
4. Implement element-wise multiplication between A and B

**Solution:**

1. 0.181818181818182, 0.363636363636365, 0.545454545454545, 0.727272727272727, 1, 0.454545454545453
2. Mean(A): 30  
Mean(B): 17.5
3. Variance(A): 250  
Variance(B): 107.5
4. 150,600,900,400,825,125