**All the questions should be answered with optimized time and space complexity describing the reasons behind the same.**

The student who answered it in an impressive way will be rewarded with some goodies. The performance will be also evaluated on the basis of how much time you are taking to submit the assignment apart from the optimization of the code.

1. Given an integer array nums of length n and an integer target, find three integers in nums such that the sum is closest to the target.[Amazon]

You need to return the sum of three integers.

For example:arr = [-1, 2, 1, -4], target = 1
Output: 2
Explanation: [-1+2+1] = 2 (The sum that is closest to the target is 2)

2. Given three points, check whether they lie on a straight (collinear) or not. [Google]

For example:
Input- [(1,1), (1,6), (0,9)]
Output- No

Input- [(1,1), (1,4), (1,5)]
Output- Yes

3. An e-commerce site tracks the purchases made each day. The product that is purchased the most one day is the featured product for the following day. If there is a tie for the product purchased most frequently, those product names are ordered alphabetically ascending and the last name in the list is chosen.[Amazon]

['yellowShirt', 'redHat', 'blackShirt', 'bluePants', 'redHat','pinkHat', 'blackShirt', 'yellowShirt', 'greenPants', 'greenPants', 'greenPants']

'yellowShirt' - 2
'redHat' - 2
'blackShirt' - 2
'bluePants' - 1
'greenPants' - 3
'pinkHat' - 1

Output - greenPants

4. An almost sorted array is given to us and the task is to sort that array completely. Then, which sorting algorithm would you prefer and why?[Salesforce]