**Program:**

import itertools

def find\_combinations(arr, target):

result = []

combinations = []

for i in range(len(arr)):

for j in range(i + 1, len(arr)):

if arr[i] + arr[j] == target:

result.append([arr[i], arr[j]])

merged\_array = sorted(arr)

double\_target = target \* 2

for combination in itertools.combinations(merged\_array, 4):

if sum(combination) == double\_target:

combinations.append(list(combination))

return result, merged\_array, combinations

arr = [1, 3, 2, 2, -4, -6, -2, 8]

target = 4

first\_combinations, merged\_array, second\_combinations = find\_combinations(arr, target)

second\_combinations = sorted(second\_combinations, key=lambda x: (x[3], x[2], x[1], x[0]))

print("First Combination For", target, ":", first\_combinations)

print("Merge Into a Single Array:", merged\_array)

print("Second Combination For", target \* 2, ":", second\_combinations

**Output**:

First Combination For 4 : [[1, 3], [2, 2], [-4, 8], [-6, 2]]

Merge Into a Single Array: [-6, -4, -2, 1, 2, 2, 2, 3, 8]

Second Combination For 8 : [[-4, 1, 3, 8], [-4, 2, 2, 8], [1, 2, 2, 3]]