```python
n = int(input("Enter the range (n): "))
arr = list(map(int, input("Enter the array elements: ").split()))
expected_sum = n * (n + 1) // 2
actual_sum = sum(arr)
print("Missing number is:", expected_sum - actual_sum)
```

```python
arr = list(map(int, input("Enter the array elements: ").split()))
seen = set()
duplicates = set()
for num in arr:
    if num in seen:
        duplicates.add(num)
    else:
        seen.add(num)
print("Duplicates are:", list(duplicates))
```

```python
arr = list(map(int, input("Enter the array elements: ").split()))
is_sorted = True
for i in range(len(arr) - 1):
    if arr[i] > arr[i + 1]:
        is_sorted = False
        break
print("Is the array sorted?:", is_sorted)
```

```python
from collections import Counter
arr = list(map(int, input("Enter the array elements: ").split()))
n = len(arr)
counts = Counter(arr)
majority_element = None
for key, count in counts.items():
    if count > n // 2:
        majority_element = key
        break
print("Majority element is:", majority_element if majority_element else "No
majority element")
```

```python
arr = list(map(int, input("Enter the array elements: ").split()))
total_sum = sum(arr)
left_sum = 0
```

```
is_balanced = False
for i in range(len(arr)):
    total_sum -= arr[i]
    if left_sum == total_sum:
        is_balanced = True
        break
    left_sum += arr[i]
print("Is the array balanced?:", is_balanced)
```

```
arr = list(map(int, input("Enter the array elements: ").split()))
target = int(input("Enter the target sum: "))
pairs = []
for i in range(len(arr)):
    for j in range(i + 1, len(arr)):
        if arr[i] + arr[j] == target:
            pairs.append((arr[i], arr[j]))
print("Pairs that sum to", target, "are:", pairs)
```