Complex Problem Scenarios Using Python Sets

Problem 1: Find the Unique Elements in Multiple Lists

Problem Statement:
You are given a list of lists, where each list contains numbers. Find all the unique elements across all the lists using sets.

Sample Input:
```
list_of_lists = [[1, 2, 3], [3, 4, 5], [5, 6, 7]]
```

Sample Output:
```
{1, 2, 3, 4, 5, 6, 7}
```

Problem 2: Find the Common Elements Between Two Lists

Problem Statement:
Given two lists, use a set to find the common elements between them and print the result.

Sample Input:
```
list1 = [1, 2, 3, 4, 5]
list2 = [3, 4, 5, 6, 7]
```

Sample Output:
```
{3, 4, 5}
```

Problem 3: Remove Duplicates from a List

Problem Statement:
Given a list with duplicates, remove the duplicates using sets and print the resulting list.

Sample Input:
```
list = [1, 2, 2, 3, 3, 4, 5, 5]
```

Sample Output:
```
[1, 2, 3, 4, 5]
```

Problem 4: Find the Union of Two Lists

Problem Statement:
Given two lists, find the union of both lists using sets and print the result.

Sample Input:
```
list1 = [1, 2, 3]
list2 = [3, 4, 5]
```

Sample Output:
```
{1, 2, 3, 4, 5}
```

Problem 5: Find the Difference Between Two Lists

Problem Statement:
Given two lists, find the elements that are present in the first list but not in the second list using sets and print the result.

Sample Input:
```
list1 = [1, 2, 3, 4, 5]
list2 = [4, 5, 6, 7]
```

Sample Output:
```
{1, 2, 3}
```

Problem 6: Check if Two Lists are Disjoint

Problem Statement:
Given two lists, check if they have no common elements using sets. Print `True` if they are disjoint, otherwise `False`.

Sample Input:
```
list1 = [1, 2, 3]
list2 = [4, 5, 6]
```

Sample Output:
```
True
```

Problem 7: Count the Number of Unique Elements in a List

Problem Statement:
Given a list, find the number of unique elements in the list using sets.

Sample Input:
```
list = [1, 2, 3, 3, 4, 5, 5, 6]
```

Sample Output:
```
6
```

Problem 8: Find the Symmetric Difference Between Two Lists

Problem Statement:
Given two lists, find the symmetric difference (elements that are in either of the lists but not in both) using sets and print the result.

Sample Input:
```
list1 = [1, 2, 3, 4]
list2 = [3, 4, 5, 6]
```

Sample Output:
```
{1, 2, 5, 6}
```

Problem 9: Convert List to Set and Back to List

Problem Statement:
Given a list, convert it to a set and then convert it back to a list. Print the result in both cases.

Sample Input:
```
list = [1, 2, 2, 3, 4]
```

Sample Output:
```
Set: {1, 2, 3, 4}
List: [1, 2, 3, 4]
```

Problem 10: Find the Subset Relationship Between Two Lists

Problem Statement:

Given two lists, check if the first list is a subset of the second list using sets and print the result.

Sample Input:

```
list1 = [1, 2, 3]
list2 = [1, 2, 3, 4, 5]
```

Sample Output:

```
True
```
